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Educational News and Editorial Comment

THE AMERICAN FEDERATION OF TEACHERS

The report of the fifth annual meeting of the American Federation of Teachers as supplied by the field secretary contains, first, a statement of the attitude of the convention on Americanization. This part of the report must be passed with a mere mention for lack of space. The second part of the report deals with an enlargement of the federation's program and may be quoted in full as follows:

The American Federation of Teachers declares its earnest purpose to be a servant of the public welfare. Its desire is to be one of the great formative factors in making education in America the actual and effective basis of sane and steady progress which it ought to be. To this end our federation is drawing the classroom teachers of America into a closer brotherhood; informing them of their community of interest in the main problems of society; improving the standards of qualification for teaching; increasing the value of the schools to the people; providing needed publicity to the people regarding the schools; striving to secure for teachers their due weight in determining educational policy through teachers' councils, teacher representation on boards of education, on municipal councils, in legislatures; promoting the adoption of local, state, and national legislation to advance the efficiency of education. The attention of the American Federation of Teachers for the past two years has naturally been largely focused upon an effort for improved financial support for education. In this effort our organization has done a great service to the whole teaching force of the nation whose attention has been directed to the same thing. The time has not yet come when we can relax our activity in regard to better pay for teachers because poor pay is inseparable from and fundamental to the

prevailing deterioration of public education—a deterioration which has not been arrested by the very inadequate increases which have been granted to teachers in the past two years. However, the impetus to better support of the schools has been given by our own efforts no less than by those of other teachers' organizations. Improvement has begun. The public is becoming aroused to the needs and will not be content with anything less than adequate provision for better schools.

The American Federation of Teachers is therefore justified in dividing its attention between the completion of its work of publicity and propaganda for improving teachers' pay and its original and fundamental purpose of making the classroom teacher the real factor in education which he should be.

This shift, marking not a return to our original task, but a renewed emphasis on what we have never ceased to insist upon, was noticeable in the resolutions and the discussions at the convention.

The principles which we have asserted—of democracy in education, education for democracy, better pay and better teaching conditions, a larger initiative and participation of teachers in educational and administrative councils—have been so right and so vital that in many quarters they have compelled their own acceptance.

It will certainly be of great advantage to the teaching profession if this organization and all other organizations of teachers will devote more attention to that activity which is described in this pronouncement in the clause "improving the standards of qualification for teaching." One misses in the amplification of the program the desirable emphasis on this point. It may be permissible to supply the emphasis through supplementary comment.

A great many teachers are not qualified to assume a larger share in educational and administrative councils. Nor will they become ready for such participation by the mere creation of such councils. Democracy requires that all those who assume its responsibilities shall prepare to do so by learning how to carry these responsibilities. The nub of the contention that teachers' unions are of doubtful value lies in the observation that they do not devote their chief energy to "improving the standards of qualification for teaching." There is the greatest need in our profession for the recognition of the importance of this improvement. If the American Federation of Teachers would present a vigorous campaign for such improvement and would devote its energies to the task of bringing it about, there would be no further

disposition to criticize it as a combination aiming chiefly at the promotion of the selfish interests of a group whose first aim should be the highest efficiency in public service.

Even increases in salary are going to depend in the future on tangible evidence that the public is receiving superior service. There can be no blinking the fact that boards of education and the public, now that the extreme economic stress is over, are beginning to demand quality. Unless some way is found of supplying it there will be no satisfactory recognition of teachers and their work.

RETARDED AND ACCELERATED PUPILS

Superintendent Loveland reports for the schools of Chatfield, Minnesota, with regard to the balance between the numbers of retarded and accelerated pupils as follows:

	Normal	Accelerated	Retarded
1917–18..	136	13	49
1918–19..	123	28	37
1919–20..	147	25	53
1920–21..	133	38	38

It has been contended with much reason that the retarded pupils cost a great deal of money as they are for the most part repeaters. It is also perfectly true that we must look for something of a normal distribution of abilities in the average system. The particular fact to which I wish to call attention is that the accelerates and the retarded are equal in number for this year in this school system. This is the ideal condition as it gives just the normal distribution we should expect, and the cost must be nearly equalized for every retarded child by one in advance. The only reason there is not a complete equalization of cost is that the retarded and the accelerates are not matched as to years, but the difference is so slight that it may be disregarded. Here is a possible ideal for any school system and one that every school administrator should endeavor to meet. It is one of those practical ideals which can be worked out with the hearty co-operation of all concerned and one which on the face of it bears all the marks of correctness and the approval of the best scientific method.

In a report dealing with the same matter the Superintendent of Schools of Alton, Illinois, gives figures which are as follows: retarded 32.7 per cent of all pupils in the schools, normal 35.5 per cent, accelerated 31.1 per cent.

It is safe to say that such reports as these would have been impossible a decade ago when there was no such keen recognition as there is today of the importance of keeping pupils properly graded. The striking fact in these two reports is the success which the systems have achieved in balancing accelerates and retards. When this kind of study first began the only type of virtue seriously demanded was a reduction of the percentage of those who were behind their grades. The hopeful sign in the reports quoted is that they show an appreciation of the importance of attention to pupils who are above the average.

HOW CONGRESS MAKES APPROPRIATIONS

We have frequently been told in teachers' meetings that the Smith-Towner Bill "carries with it" an appropriation of $100,000,000. It now appears that the original bill drafted by the National Education Association Commission and introduced in the Senate was in a form which was wholly ineffective because all federal appropriations must originate in the House. Furthermore, we have in the official analysis of the bill prepared by Judge Towner a statement which makes it clear that the House bill itself is not an appropriation bill.

Judge Towner's statement is as follows:

> The additional demand which will be made upon the Treasury is urged as an objection. In the first place, it should be observed that the bill does not appropriate but merely authorizes appropriations. It establishes a limit rather than creates a burden. It is within the discretion of Congress to appropriate the whole or any part within that limit in any year. Besides, it is not at all probable that the entire amount provided will ever be called for. To absorb the entire amount all the states would have to qualify under all the five separate provisions every year. It is not likely that this will ever occur. Some states will qualify for aid in the removal of illiteracy. Others will not need it. Some will qualify for the Americanization of immigrants. Others will not do so. And this is the case with each of the five provisions. The Federal Government will respond only when the state shall deem its own need in that particular matter of sufficient importance to make at least an equal appropriation.

Judge Towner is, of course, quite right about the matter. Congress makes its appropriations in two steps, not lightly on first suggestion, as many members of our profession have been led to

think. If Congress had been responsible for the bill, it would probably have added another step to its deliberations in this case, namely, the careful consideration of the grounds for each of the appropriations. A department of education to help Congress understand the needs of the country in a clear-cut scientific way is easy to defend as a desirable addition to the federal equipment. Such a department might recommend $20,000,000 for physical education, and it might find some entirely different sum necessary. That sum, as it now stands, is to be understood in terms of Judge Towner's phrase as a "limit, not a burden." When the department of education of a truly scientific sort, for which we may all devoutly hope, gets under way, may it not prove to have been unwise to have set the limit by guesswork, especially when the burden is going to be adjusted by Congress later? It would seem as though educators ought to have considered the true problem, namely, the magnitude of the burden which the government is to carry. At all events the shouting has been somewhat premature. We thought we were indorsing an appropriation. We need to take a course in civics.

CATHOLIC BUREAU OF EDUCATION

A special bureau of education has been organized as a subdivision of the National Catholic Welfare Council, 1314 Massachusetts Avenue, N.W., Washington, D.C. This bureau is under the direction of Arthur C. Monahan, who was formerly connected with the United States Bureau of Education.

The bureau is described in a circular of information as a clearing-house for Catholic education. It is to keep in contact with all parochial schools and to serve as a link between these schools and public agencies engaged in promoting education.

There are two paragraphs in the circular which are of such general importance that they are quoted herewith:

> The bureau will collect full information concerning Catholic schools and colleges and other institutions of learning which it will be prepared to furnish to Catholic educators, to the United States Bureau of Education, and to the general public. It will publish an annual directory of Catholic schools and school officials. It will be prepared to give information relative to individual schools to persons needing such information, particularly to parents

seeking schools for their children. It plans to be prepared to give advice to Catholic educators relative to educational methods, equipment, building, organization, teachers, and to assist qualified teachers in finding positions.

The Bureau of Education of the National Catholic Welfare Council believes in public education and the public school system. It will be ready to co-operate in all desirable movements for the improvement of public schools, provided such movements will not curtail the rights of the people to maintain and patronize private and parochial schools. It will stand upon the platform that it is the duty of every American citizen to contribute to the support of public schools, but it is his right to send his children to any type of school he may wish, provided such school is truly American in its teachings.

It believes that religious education is an essential part of the general education of every child, whether Catholic or not. It believes that right living and good government depends more upon a knowledge and the practice of the laws of God than upon general education without such knowledge. It believes that morality results from religious convictions rather than knowledge of social diseases. Therefore, it will assist in providing religious education for Catholic children attending public schools, and it will be ready to join with other church organizations in their endeavors to provide religious education for children of their own religious denomination.

These are encouraging statements. One can see in them a growing recognition of the fact that no school can escape responsibility to the public. The recent movement in Michigan to prohibit all forms of private education, though it failed, was notice to parochial schools that there will not long be tolerance in this country for purely private educational organizations. There must be information about all schools. Heretofore it has been impossible to secure a full account of the attendance and curriculum of parochial schools. Still less has it been possible to secure any information about standards of work. If the new bureau fulfils the announced purpose for which it is organized, it will work a radical reform and be of large public service.

Information to the public is likely to be followed by some form of public supervision. Parochial schools will shortly face, it is to be hoped, a legal demand that they conduct instruction in the English language. This will mean supervision and will undoubtedly in the long run be distinctly advantageous to the schools themselves. Following this ought to come a legal requirement that the teachers be of an adequate grade and breadth of training. Still further, it will undoubtedly come to pass that the curriculum will

be made a subject of strict inquiry. Supervision is not a burden to anyone who is fully aware of his responsibility to the public. Schools are at least public utilities, and we are not willing these days to allow public utilities to go unsupervised.

It will be well for all of us if information of the broadest type can pave the way for complete public understanding on both sides of the complex matter of public and parochial education.

VISUAL EDUCATION

The country has been flooded of late with propaganda material for visual education. Much of this material has been of the cheapest and most sensational type. Some of it has confined itself to the statement of the true merits of the visual method of instruction and will do more for the promotion of visual education of the right kind than will the cheap variety.

Visual education, especially that form which uses moving pictures, undoubtedly has certain very attractive possibilities for the school. It makes vivid to the observer scenes which he could not otherwise take into his personal experience. But it is a perfectly clear fact, supported by a vast body of experience, that neither children nor adults can see very many details in any scene which is exposed merely to rapid, passing observation. Many experiences must be studied and analyzed in order to be understood. There are occasions when a chart, though it is not so attractive, is infinitely more educative in a visual way than is a moving picture. There are a great many cases when the only way to get attention concentrated on the right items in a situation is through carefully formulated verbal statements.

The most egregious fallacy of the visual educators is that which they make when they try to vend their wares as complete substitutes for textbooks. An example of this sort of thing was perpetrated in a circular which came to the editor some days ago. With various personal data deleted, the circular sets forth its claims in the following terms:

> Whether the screen or the textbook is more desirable and effective in nature-study teaching has just been put to the children in two public schools. One hundred and seventy out of one hundred and eighty voted in favor of the screen as a choice of methods.

This novel educational experiment conducted by a science teacher was based upon a film exhibiting "The Life-History of the Monarch Butterfly." The children were pupils of the seventh and eighth grades. Previously they had studied the Black Swallowtail butterfly from textbooks and actual specimens.

Not only did the children express an overwhelming preference for the motion-picture way, but they knew as much about the Monarch butterfly from a showing lasting fifteen minutes as they did of the Black Swallowtail, to which six thirty-minute periods had been devoted in the use of textbooks, specimens, and oral discussions. At least, that is what was shown by the papers which they wrote during the remaining fifteen minutes of the science period.

"It took two weeks to learn about the Black Swallowtail and only half an hour to learn about the Monarch butterfly," one boy shrewdly observed.

The film showed every detail of the metamorphosis, from the "milkweed caterpillar" greedily feeding, and later spinning the silk button from which its chrysalis hangs, to the butterfly taking form within the chrysalis case and finally emerging as a moist, crumpled creature that unfolds into the glorious copper-winged Monarch.

"You learn more when you actually see it done in moving pictures than when you have to turn to page 146, say, and read about it," wrote one child.

As an educational experiment by a science teacher this seems to be, to say the least, a bit biased. The Monarch butterfly seems to have had a background of the Black Swallowtail, but no credit is allowed the humble black moth for all the preparation which he supplied for his more brilliant successor.

After all, are the visual educators of the Simon-pure type going to gain their point by putting out this sort of stuff? Visual education is too good a possibility to fall into this kind of quackery. The textbook is too good an instrument of scientific teaching to be elbowed around in this way.

AMERICANIZATION WORK IN BAYONNE, NEW JERSEY

Bayonne is a typical industrial community. Its population of 75,000 contains 15,000 Poles (Russian, Austrian, and German), 12,000 Jews (Russian, Austrian, Roumanian, and Polish), 6,000 Italians, 7,000 Slavs, 400 Russians, and several hundred each of Spaniards, Lithuanians, Austrians, Bohemians, Hungarians, etc. Eighty per cent of its population is either foreign-born or the children of foreign-born peoples. Most of the aliens are unskilled

laborers or workmen of the semi-skilled type who operate automatic machinery. With the exception of the extreme southern and northern ends of the city where there is only a sprinkling of foreign-born, these aliens inhabit the entire city, the different nationalities intermingling.

The Americanization work is carried on in the main by three agencies—the Board of Education, the Industrial Y.M.C.A., and the International Y.W.C.A. All of the educational work and a good portion of the other phases of the work are carried on by the Board of Education.

The program began in 1919 with a teachers' institute. At this institute about one hundred teachers were trained in the best methods of teaching English to adult aliens, and in history, racial backgrounds, and social problems of the nationalities represented in our communities. This was followed by an "Americanization Dinner" under the auspices of the Board of Education and the Chamber of Commerce, to which all the industrial heads, racial leaders, and public-spirited citizens were invited. The program was explained, the problem stated, and the active co-operation of all secured.

The program as it is now being carried out by the Board of Education consists of the following activities: (1) education (evening schools, home classes, and factory classes), (2) recreation, (3) extra-school instruction, (4) naturalization.

Evening classes are being conducted at four of the schools, the Y.M.C.A., the Y.W.C.A., and at other places where groups for instruction can be organized. Classes meet for two hours per evening three evenings a week. Instruction is in English (conversation, reading, and writing), United States geography, history, and civics. The schools are opened in September and run continually to the middle of June.

Home classes are intended for those women who, because of household duties, are unable to leave the home to attend school. These classes consist of the housewives of one or two tenement houses and meet in the homes of one of the students, the teacher going from class to class. A teacher reaches over fifty students per week in this way, and hundreds of foreign women who could

not be reached in any other way are given instruction in these classes.

Factory classes are conducted in all the industries where a group of twelve or more can be organized. In factories where only day work is carried on, the classes meet at the close of the day's work. In a continuous process factory where work is carried on for twenty-four hours per day, the day shift meets at the end of the day's work, the evening shift meets before the day's work begins, and the night shift attends evening school, e.g.:

Shift	Class
7 A.M.– 3 P.M.	3–4 P.M.
3 P.M.–11 P.M.	2–3 P.M.
11 P.M.– 7 A.M.	7–9 P.M.

Special classes in preparation for citizenship are conducted in all these schools. The students are frequently given an opportunity of meeting and hearing their city, state, and federal officials, and the judges of the Naturalization Court. The Federal Examiners examine the men in their classes, the men are accompanied to the courthouse to have their difficulties smoothed out, and all successful applicants are presented with their naturalization papers at the graduation exercises held in June. In order to facilitate the preparation for citizenship, a manual has been prepared giving the history, geography, and civics of the United States, New Jersey, Hudson County, and Bayonne.

There is a large element that we are unable to attract to our classes who are in need of some instruction. In order to reach these people we have motion-picture shows in three centers once a week. With our programs we are giving as complete a history as is possible of our country from the landing of Columbus to the present day, and a comprehensive course in our geography, industry, and resources. We reach over 2,500 adults weekly in this way. For the same purpose, and to attain the same end, we have frequently had lectures on Americanism in English and in tongues native to the audience. These have proved very popular, profitable, and instructive.

Athletic activities are carried on at all the centers. Dancing instruction is given to all our students who want it, and frequent

dances and sociables are given. These are useful in breaking down the barrier of the sensitive of the foreign-born. Frequently whole classes are taken to New York to visit such places as the Museum of Art, Museum of Natural History, the theater, etc.

A special recreation center for girls and young women is conducted in one of the schools. There the girls are taught English, cooking, sewing, dressmaking, millinery, dancing, etc., and are given an opportunity for recreation under proper conditions. We are now attracting to this center the graduation class girls of our parochial schools for foreign-born. Last June, just previous to our graduation exercises, our graduating class consisting of over sixty successful applicants for citizenship visited Washington, D.C., on a two-day pilgrimage. They visited all points of interest in and about Washington, Mount Vernon, and Arlington Cemetery, met many of our prominent legislators, and saw our federal-government machinery in action. It was a fitting close to two years' preparation for American citizenship.

We instruct between 1,500 and 2,000 adults in our classes annually and through our other activities are reaching thousands of others weekly.

EDWARD BERMAN

News Items from the School of Education of the University of Chicago

THE KINDERGARTEN-PRIMARY DEPARTMENT, SUMMER QUARTER, 1921

Following the plan of previous years, the Kindergarten-Primary Department has endeavored, in organizing its program for the Summer Quarter of 1921, to meet the different needs of the large body of students interested in kindergarten and primary education who attend the summer session. Because of the increasing demand, an unusually large number of courses have been planned which will be of special interest to supervisors, critic teachers, and instructors in normal schools. The usual number and variety of courses for classroom teachers will also be offered. All members of the Faculty of the Kindergarten-Primary Department will be in residence. There will also be a number of visiting instructors from different parts of the country, each a specialist in her particular division of primary and kindergarten education.

The following list represents the character of the courses offered for supervisors and critic teachers:

A Curriculum for the Lower Grades Based on Children's Activities, Miss Mabel Goodlander, Instructor in Primary Education, Ethical Culture Normal School, New York City.

The Supervision of Reading in Primary Grades, Miss Yetta Shoninger, Instructor in Education, State Normal School, San Jose, California.

Critical Study of the Kindergarten-First-Grade Curriculum, Miss Katharine Martin, School of Education, University of Chicago.

Supervision of History Teaching in Primary Grades, Miss Grace Storm, School of Education, University of Chicago.

Kindergarten-Primary Supervision, Assistant Professor Alice Temple, School of Education, University of Chicago.

Among the courses planned for teachers are some which are general in character and others which are courses in methods of teaching special subjects in the kindergarten and primary grades.

Courses in the teaching of reading and language will be given by Miss Lucas, Miss Hardy, and Miss Brown of the University Elementary School. Miss Ella Champion, Supervisor of Kindergarten and Primary Grades, Niles, Michigan, will give courses in nature study. A course in the teaching of community life, history, and civics will be offered by Miss Storm. Courses in manual arts will be given by Miss Robinson and Miss Cameron of the University Elementary School. Miss Foxwell, Head of the Kindergarten Department, State Normal School, LaCrosse, Wisconsin, will give a course in plays and games, and Miss Goodlander, a course in dramatization for young children. Miss Martin will give a course entitled the Kindergarten-First-Grade Curriculum, and Miss Temple, a course entitled Unified Kindergarten-First-Grade Teaching.

The registration in all classes in this department will be limited to a number small enough to admit of class discussion and to enable the instructor to become acquainted with each member of the class.

A demonstration class, including a kindergarten and a first-grade group, will be in session during the First Term. This class will be in the charge of Miss Robinson and Miss Hardy, the regular teachers, and Miss Foxwell. It will be open for observation to students registered in the Department.

A series of departmental conferences has been arranged, some of which will be addressed by prominent members of the general faculty. There will be opportunity also for supervisors to arrange for special smaller conferences for the purpose of informal discussion of some of their practical problems.

A full statement of the content of each course will be found in the announcement for the Summer Quarter, which will be sent upon request.

RESEARCH FUND FOR EDUCATION

AN EDITORIAL[1]

The natural sciences were greatly stimulated during the war and after the war found it desirable to carry forward in the National Research Council an organization devoted to the promotion of co-operation in research. Something analogous is certainly needed in each of the social sciences. Especially is this true in the field of research as applied to school practices, where unique difficulties appear in co-ordinating scientific work.

A most significant step has been taken in the direction of providing for the promotion of broad educational research by the newest of the foundations, the Commonwealth Fund. This is a foundation established by the Harkness estate for the purpose of aiding in any worthy social or educational cause. It has been canvassing for some time the possibility of contributing in a productive way to public education and has finally established a fund for the support of research, amounting to $100,000 a year for a period of five years. The statement issued by the directors with regard to their method of procedure in establishing this research fund is as follows:

> The directors of the Commonwealth Fund, having become convinced of the importance of encouraging educational research, requested a group of leading educational men of the country to report upon the opportunities in the field and recommend a plan of operation.
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> This Educational Research Conference was held in Atlantic City on October 23, 24, and 25, 1920. The members attending the conference were: A. Ross Hill, President, University of Missouri, *Chairman;* Lotus D. Coffman, President, University of Minnesota; Charles H. Judd, Director, School of

[1] In view of the fact that the announcement included in this editorial is of major importance for the type of work which the journals published by the Department of Education aim to foster, the editorial will be published in both the *School Review* and the *Elementary School Journal*. This breach of our common practice will be easily understood as an effort to give as wide publicity as possible to an important contribution to educational research.

Education, University of Chicago; Paul Monroe, Director, School of Education, Teachers College, Columbia University; Leonard P. Ayres, Director, Division of Education, Russell Sage Foundation; Samuel P. Capen, Secretary, American Council on Education; Paul H. Hanus, Professor of Education, Harvard University; Max Farrand, General Director of the Commonwealth Fund.

A gratifying feature of the conference was that the members were able to agree so readily, not merely upon the large divisions of the field, which were fairly obvious, but also in selecting some of the most desirable problems to be investigated within each division.

The conference therefore made its report, choosing for its main subjects: the problem of school revenues; the evaluation, analysis, measures and standards of accomplishment of school subjects; the field of supervision; and the reorganization of public-school systems. In each one of these larger divisions the conference chose a particular subject by way of illustration, suggesting how and by whom the study of that particular subject might be advisedly undertaken.

For the carrying on of this research, the conference recommended the appointment of a committee to consider and recommend projects for research, and to assume executive responsibility for supervising the carrying on of such researches as might be adopted, and it was deemed advisable that this committee might also recommend researches to be undertaken by individuals or associations.

The directors of the Commonwealth Fund accepted this report, and appointed the following committee: Leonard P. Ayres, Vice-President, Cleveland Trust Company; Samuel P. Capen, Secretary, American Council on Education, *Secretary;* Lotus D. Coffman, President, University of Minnesota; Ellwood P. Cubberley, Professor, Stanford University; Charles H. Judd, Director, School of Education, University of Chicago; Paul Monroe, Director, School of Education, Teachers College, Columbia University; Frank E. Spaulding, Professor, Yale University; Max Farrand, General Director, the Commonwealth Fund, *Chairman,* ex officio.

There were several methods of supporting research open to the directors of the Commonwealth Fund. They might have followed the example of the Russell Sage Foundation and set up a special central bureau for such work. Under the direction of Dr. L. P. Ayres, the Russell Sage Foundation has produced a series of notable studies, including the earlier studies of medical inspection, and of laggards, and the later work on the writing and spelling scales and the comparisons of state school systems. It was the judgment of the conference at Atlantic City that such a form of organization would be likely to withdraw from existing institutions

a number of persons who are very much needed to train advanced students of education and, furthermore, such a central bureau or agency would be not unlikely to narrow its interests and deal with a more limited range of investigations than will be provided for under the plan adopted.

A second plan of organizing research which might have been adopted was that of subsidizing institutions which are engaged in research work at the present time. This is a familiar form of support dispensed by foundations. It contributes to the upbuilding of institutions, but usually leaves research in a particular field to compete for support with the other vital interests of the institutions, or else, through the establishment of special research institutions, tends to foster the same type of specialization that was referred to in the discussion of a central bureau under the immediate control of the foundation. At the present time, when universities are straining every resource to provide for abnormally large bodies of students, there are many examples of neglect of research because the general demands of institutional up-keep are so exacting. The Atlantic City conference was not in favor of an expenditure of the funds on the endowment of institutions.

There was another type of consideration which contributed largely to the decisions which were reached with regard to the method of organizing the responsible committee. There is great need in American education of some new method of promoting national co-operation in research along educational lines. In no field of scientific work are the dangers of scattered and competitive activities so great. The single worker, realizing that the limited time and funds which he can command will not carry him far, is eager to make as much of a showing as he can with his minor production. We see as a result a whole series of worthy, but comparatively trivial, pieces of research, carrying the names of their authors, until the number of personally named scales, tests, and conclusions on educational matters has reached the point where one can hardly carry in mind the encyclopedic array. The temptation has been strong under these conditions to magnify individual interests and to minimize objective results.

Furthermore, it has at times been very difficult to secure co-operation between institutions. Institutional leadership in research has in some cases been sought, not by the methods of encouragement of all who are contributing, but by systematic depreciation of all work which comes from other institutions. There can be no doubt that this form of institutional rivalry has held back the science of education in serious degree.

Mere gifts to individual institutions might ultimately overcome some of this pettiness by increasing the volume of production until educational science reached the level of the maturer social sciences, but the prospect seems remote. It is clear that one of the most important contributions which the Commonwealth Fund has already made to educational science is that it has set the example of broad co-operation. There will of necessity grow out of this spirit of co-operation a more wholesome view of the meaning of objectivity. There will be a submerging of petty rivalries.

One illustration of the need of co-operation can be given by commenting on one of the items which is mentioned, but not fully described, in the list of possible lines of research. The item in question is the fourth in the list, namely, "reorganization of public-school systems." During the last decade there has been spreading through all parts of the nation a reorganization of the upper grades of the elementary school, of the first two years of college, and of the whole structure of the high school. The movement of reorganization has been sponsored by no single group of leaders; it has had no single pattern on which to work out its changes, and yet it has shown astonishing vitality. A number of writers have tried to describe the movement, but clearly no one has compassed in any statement yet published its full scope and meaning. It is a spontaneous nation-wide movement toward a new kind of a school system.

Like all movements in our educational system, it has suffered at some points from mismanagement and has been held in check as a result of lack of a broad spirit of national appreciation of its significance. There is evident need of more than piecemeal description of single aspects of this movement. There is need of a

steady, broad canvass of general conditions, followed by careful testing of results and vigorous promotion of constructive changes. This means something more than sporadic partisan investigations; it means a persistent and comprehensive examination of all aspects of the reorganization that is going forward, and it also means encouragement of experimentation. The Commonwealth Fund committee should be able to promote such general investigations and as a result should be able to contribute to the general reorganization.

The Commonwealth Fund program is unique in that it does not duplicate the activities of other organizations and does not come into the field as a rival of any existing educational agency. It is sometimes pointed out that the national government ought to carry on educational research as it carries on research in agriculture. It is often said that state departments of education should make themselves responsible for the collection and distribution of more information of the type which will guide school practices. Municipalities are beginning in some quarters to see the importance of scientific tests and investigations as a part of their regular work. But the combined contributions of all these agencies are small as compared with the needs, for the reason that nearly all the energy that can be expended by any public administration must go into routine. The people of this country are slow to see the importance of public support of research, even when the efficiency of their institutions is involved. In some way or other there must be pioneer work which will demonstrate the value of scientific research. Such pioneer work always has to depend on private endowment or the personal initiative of single devotees to scientific methods.

The result is that most of the scientific work which has been done in education is the work of departments of education in universities, colleges, and normal schools. But such departments are also absorbed in routine—the routine of organizing and teaching classes of students. They have perhaps more opportunity than public administrative agencies to devote time to research, but they suffer marked limitations. They lack also in some instances the breadth of view that is needed in a period of general educational reorganization.

All these struggling agencies need a margin of additional support. They need to have a little more energy and a little more opportunity than is provided for their routine work. The administration of this margin must also be unlimited as to region or problems. It is desirable that there should be help for anyone who is working productively anywhere in the nation.

The Commonwealth Research Fund promises to be a source of exactly the kind of margin that workers in the field of education need. Temporary grants for particular pieces of work are possible on a generous scale. What is needed is definite and well-considered plans of action from all who can advantageously use this margin.

There will doubtless be, as there always is at the beginning of any such enterprise, a great deal of misunderstanding. Some people will think of this as a new source of institutional endowment and will ask that their institutions be endowed in order to carry them through some practical emergency or in order to promote their general activities. Some will think of research as a special type of propaganda. They will feel that the fund ought to be expended in the spread of ideas which they have long cherished as essential to the betterment of American education. Gradually such misconceptions will be overcome, however, and there will be a more general appreciation of the meaning and importance of research in education.

The requests for aid which were presented to the committee at its first meeting exhibited all shades of interpretation of the meaning of research. Those requests which received favorable consideration were the ones which set forth in detail and in exact form the problem to be attacked, the method of attack, the time at which a report could be rendered, and the resources both in the way of personal services and equipment necessary to carry out the research.

The secretary of the committee, Dr. S. P. Capen, and Professor Max Farrand, the Director of the Fund, who is also chairman of the committee, are the proper persons to address in presenting proposals or making inquiries. The former is to be reached at 818 Connecticut Avenue, Washington, D.C., the latter at 1 East 57th Street, New York City.

THE FUNCTIONS OF THE ELEMENTARY-SCHOOL PRINCIPAL

WORTH McCLURE
Gatewood School, Seattle, Washington

What are the duties of the principal?

If this question were asked of a group of classroom teachers, there is no doubt that there would be almost as many different answers as there were individuals composing the group, and that if each might be induced to speak frankly, the principal would be invested with a wide array of functions, varying all the way from the menial service of the errand boy to the high prerogatives of the autocrat.

To the taxpaying public, all too frequently, he is only the man who sits in the office; while to Willie and Johnny in the fifth grade, it is to be feared, he is not seldom only "the guy that licks the kids."

City superintendents in general may be said to be divided into two groups with reference to their beliefs upon this question. The first group, comprising many able and successful superintendents, holds that the principal's work is concerned chiefly with following directions from the central office. The conception of the second group, in the words of Superintendent Herbert S. Weet[1] of Rochester, is that "we must work to the principle of expecting and providing for an initiative and leadership from the elementary-school principal."

There is, moreover, reason to believe that many principals are not clear in their own minds as to their rightful place in the school organism and the peculiar functions of that place.

On the other hand, never was the outlook so propitious for the principal. There is a widespread tendency to recognize the importance of the principalship and to study its problems. This

[1] Herbert S. Weet, "The Duties of the School Principal," *Elementary School Journal*, XX (December, 1919), 253–62.

study represents an attempt by the Seattle Principals' Association to assist in the clarification of thought that is now taking place.

The purpose of the investigation is to answer two questions: What are the functions of the elementary-school principal in theory and in practice? What is their relative importance in theory and in practice?

The questionnaire method has been followed entirely. Information was gathered from three sources: superintendents of the thirty largest cities in the United States, sixteen university professors of education, and the principals of the elementary schools in Seattle. Questionnaires were prepared by the special committee of the Principals' Association, consisting of Arthur S. Gist (chairman) and the writer, in conference with Superintendent Frank B. Cooper, Dr. George S. Counts, of the University of Washington, President Dio Richardson of the Association, and others. The material as here presented comprises a considerable part of a master's thesis as worked out by the writer during the year of 1919–20 under the direction of Dr. Counts at the University of Washington.

The elementary-school principals of Seattle were asked to keep a minute daily record of the time devoted by them to the various activities, using a specially prepared blank which made it possible to segregate the amounts devoted to the respective functions. Forty-three of the sixty-seven principals kept such a record for one week.

THE FUNCTIONS OF THE PRINCIPAL DEFINED

The questionnaire to university professors of administration enumerated the following general groups of functions: (1) clerical; reports, bookkeeping, inventories, etc.; (2) administrative; management of activities, cases of "discipline," maintenance of repairs, etc.; (3) supervision of teaching; (4) professional study and growth; (5) community leadership.

The character of the first two groups of functions is perhaps clearly enough indicated by the examples cited under each item.

The term "supervision of teaching" for the purposes of this study may be said to include not only actual oversight of the work

of instruction, but also all those activities which are intended to improve the quality of teaching. It will be seen that the idea of leadership is involved here to a considerable extent.

It is clearly one of the functions of the principal to be alive professionally, both for the sake of his school and for his own sake. Furthermore, he should be progressively alive, not merely existing after the fashion of the amoeba. He must grow in capacity and in vision. For want of a better term, this function has been called "professional study and growth."

The last-named class of functions, "community leadership," includes those activities which make for the advancement of education and hence of life in the community. In modern days, the principal must guide the educational thought of his district through a maze of fads and illusions to a recognition of what is true and lasting. He must do this carefully if he would have his community back of the school. He needs the backing of the community both spiritually and financially. It may be safely prophesied that a continuance of the present high cost of education will compel many educational leaders to see the necessity of "selling" the school to its patrons.

The foregoing list of functions was intended only as a tentative one and was submitted to twenty-seven leaders of educational thought with the request that such additions or alterations be made as were deemed essential. It was found, however, when the replies were received that only two additions and one alteration had been made to the list, while thirteen of the sixteen who answered were apparently satisfied with the list as presented. "Teaching children" and "school leadership" were each suggested once as desirable additions, while the term "professional study and growth" was changed once to "professional leadership." It will be seen that the latter idea falls largely under our definition of supervision of teaching, and that the other two suggestions may be said to be partially included under the administrative and partially under the supervisory function.

It is recognized that the list as it stands probably overlaps in certain instances. Specific activities of the principal may appear

to classify themselves under more than one group. Nevertheless, it is believed that the lines have been drawn with sufficient clearness to afford a working classification. The fact that thirteen of the sixteen authorities who passed upon it found it acceptable and that only comparatively slight changes were suggested by any seems to afford sufficient justification for its use.

RELATIVE THEORETICAL IMPORTANCE OF THE PRINCIPAL'S FUNCTIONS

Data for this part of the study were obtained from two general sources:

1. University professors of education, who were asked to revise the list of functions given above until it was found acceptable and then to make a distribution of 100 points over the revised list, weighting each function in accordance with its theoretical importance. Fifteen complied with this request.

TABLE I

RELATIVE IMPORTANCE OF THE VARIOUS FUNCTIONS ACCORDING TO THE COMBINED JUDGMENTS OF FIFTEEN UNIVERSITY PROFESSORS

Rank of Importance	Function	Median Weighting	Total Weighting	Range
1.....	Supervision of teaching	40	582	25–65
2.....	Administration	20	310	10–40
3.....	Community leadership	15	218	10–25
4.....	Professional study	11	197	5–30
5.....	Clerical work	10	130	0–20

2. Superintendents of large cities, who were asked to indicate the per cent of his time which they expected the principal to devote to each of the first three functions. It was assumed in this case that the superintendent would expect the principal to distribute his time according to the relative importance of the respective functions. Twelve superintendents answered this question.

Table II may be interpreted as follows: Clerical work was considered of first weight by none of those making returns; of second weight by one; of third weight by four, etc., while its final rank according to the preponderance of individual judgments appeared to be fifth.

It is believed that the following conclusions may be safely drawn from Tables I and II:

1. The supervisory function appears to be easily the most important. It is considered to be twice as important as administration; its importance is apparently greater than that of any two functions combined, or of the three lowest functions combined.

2. Considering the individual judgments, there appears to be practically a general agreement that supervision is the most important function of the principal, since fourteen out of fifteen judges placed it first.

TABLE II

THE SEVERAL FUNCTIONS RANKED ACCORDING TO THE INDIVIDUAL WEIGHTINGS OF FIFTEEN UNIVERSITY PROFESSORS

Ranks	Clerical	Administration	Supervision	Professional Study	Community Leadership	Others
1.....	0	3*	14	0	0	1†
2.....	1	6	1	3	3	0
3.....	4	6	0	6	7	2‡
4.....	1	0	0	3	5	0
5.....	7	0	0	2	0	0
6.....	2	0	0	0	0	0
Final Rank	5	2	1	4	3	

*Administration was twice weighted the same as supervision.
†Professional leadership was given first weighting once.
‡Teaching children and school leadership were each ranked third by one person.

3. Administration may be accorded second rank in importance by individual judgments as well as by the combined weightings. Individual rankings also agree with combined rankings in placing community leadership third, professional study and growth fourth, and clerical work fifth.

It was thought advisable to ask the city superintendents to evaluate the functions as far as possible upon the basis of time emphasis. This afforded a somewhat different angle from which to view the problem, but it had the disadvantage that two of the functions, community leadership and professional study and growth, were not commensurable by such a standard, since both make their greatest demands upon outside time rather than school time.

Supervision, according to Table III, appears to be clearly the highest of the three functions under consideration, in the minds of the superintendents, since they expect it to receive more time than the other two together, or two and one-half times as much as administration.

TABLE III

RELATIVE IMPORTANCE OF CERTAIN FUNCTIONS UPON THE BASIS OF THE PER CENT OF TIME WHICH SUPERINTENDENTS EXPECT THE PRINCIPAL TO DEVOTE TO EACH

Rank of Importance	Function	Median Percentage	Range
1.....	Supervision	50	40–80
2.....	Administration	20	5–60
3.....	Clerical work	10	0–25

In view of the fact that superintendents expect the principal to devote at least half of his time to supervision, we are probably warranted in concluding that they consider it the main function of the principal.

RELATIVE IMPORTANCE OF THE PRINCIPAL'S FUNCTIONS IN ACTUAL PRACTICE

The sources of data for the study of this phase of the problem are as follows:

1. Daily-time records for the week of March 22–26, 1920, from forty-three Seattle principals.

2. Distributions of 100 points by thirteen university professors over the list of functions in accordance with their personal observations of the importance attached to the respective items by the present-day practice of principals.

3. Current literature concerning the problems of the principalship.

From Table IV it appears that the order of importance upon the basis of time emphasis by Seattle principals is administration, supervision, clerical work. Administration received about 36 per cent more time than did supervision, and about 73 per cent more time than clerical work, in the practice of the majority. Supervision received about 26 per cent more time than clerical work.

An examination of the reports of their observations by the university men as to the practice of elementary-school principals is interesting as affording a check upon the validity of the Seattle

TABLE IV

RELATIVE IMPORTANCE OF THE FUNCTIONS IN PRACTICE UPON THE BASIS OF TIME EMPHASIS BY FORTY-THREE SEATTLE ELEMENTARY-SCHOOL PRINCIPALS

Rank of Importance	Function	Median Number of Minutes per Week	Range
1	Administration	882.5	300–2,000
2	Supervision of teaching	650	120–1,610
3	Clerical work	510	150–980

returns. It will be remembered that they were asked to make a second distribution of 100 points over the list of functions, weighting each in accordance with its importance in practice.

The order of importance according to Tables V and VI is apparently as follows: administration, clerical work, supervision, community leadership, professional study and growth.

TABLE V

RELATIVE IMPORTANCE OF THE FUNCTIONS IN ACTUAL PRACTICE, AS OBSERVED BY THIRTEEN UNIVERSITY PROFESSORS

Rank of Importance	Function	Median Weighting	Total Weighting	Range
1	Administration	30	452	27–50
2	Clerical work	30	375	20–40
3	Supervision of teaching	17	217	5–30
4	Community leadership	10	126	5–25
5	Professional study and growth	9	88	0–20

There appears to be slight difference in the emphasis accorded by practice to the two last-named functions. Doubtless the safest conclusion would be merely that they are found to have less importance than the first-named three, according to observation.

From a comparison of Tables IV, V, and VI, it will be seen that the observation of the university men bears out the results of the Seattle returns in a general way. From both angles, administration is found to be accorded considerably more attention than supervision. The observation of the university men, however, places

clerical work on nearly an equal footing with administration, while Seattle principals seem to give it an emphasis not quite equal to that given supervision.

Contemporary professional literature seems to confirm the belief that administrative routine overshadows in practice the other activities of the principal.

TABLE VI

A SUMMARY OF THE INDIVIDUAL WEIGHTINGS BY THIRTEEN UNIVERSITY PROFESSORS UPON THE BASIS OF ACTUAL PRACTICE

Ranks	Clerical	Administration	Supervision	Professional Study	Community Leadership	Others
1.....	4*	12	1	0	0	0
2.....	8	1	1	0	1	0
3.....	1	0	8	1	2	2†
4.....	0	0	2	6	7	1‡
5.....	0	0	1	4	3	0
6.....	0	0	0	1	0	0
Final Rank	2	1	3	5	4	

*Clerical and administrative functions were placed first with equal weightings by three persons. Clerical work was weighted heavier than the other functions in only one instance.

†School leadership and professional leadership were each suggested once as proper functions, and each was rated once as of third rank of importance in actual practice.

‡Teaching children was also suggested as a proper function by one person and was once ranked fourth in importance in actual practice.

McMurry[1] cites returns from a questionnaire sent in 1911 to eighty-one New York elementary-school principals, showing that about two-thirds of the time of the principal was customarily devoted to managerial duties.

Elliott,[2] speaking of conditions in New York, says: "The position of the principal is primarily administrative rather than supervisory."

W. S. Gray,[3] discussing "The Work of Elementary-School Principals," implies the preponderance of attention to administration: "If elementary-school principals secure time for the important problems of supervision, it will be necessary for them to reorganize their daily programs more economically and effectively."

[1] F. M. McMurry, *Elementary School Standards.* Yonkers-on-Hudson, New York: World Book Co., 1914. Pp. viii+218.

[2] E. C. Elliott, *City School Supervision.* Yonkers-on-Hudson, New York: World Book Co., 1914. Pp. xiv+258.

[3] W. S. Gray, "The Work of Elementary-School Principals," *Elementary School Journal,* XIX (September, 1918), 24–35.

Reavis,[1] in a discussion of "The Duties of the Supervising Principal," says: "Many principals complain that much of their time is consumed with managerial duties alone, and that no time is left for other duties."

Mirick,[2] in an article on "Administration and Supervision," even goes so far as to advocate the entire separation of the supervisory and administrative functions, chiefly upon the grounds that the enormous pressure of the latter makes impossible efficient exercise of the former: "In a large, highly organized system of schools, the principals are in fact the superintendents of the buildings or districts of which they are in charge. . . . . Administration always crowds out supervision when they compete for the time and attention of one who has both."

Spencer[3] calls attention to the frequency with which the principal "lets routine matters absorb his attention to such an extent that he fails to give adequate attention to the significant problems of instruction."

Dr. Bobbitt[4] lists forty-nine mistakes commonly made by principals. Of these, only five are such as might be termed lack of attention to administrative routine, while seven, on the other hand, consist in too great attention to that class of functions, and ten clearly indicate lack of attention to supervision. Since his material was collected from superintendents and teachers as well as principals, it is of especial significance as indicating the general tendency to overemphasize managerial work at the expense of other activities.

Of great interest as affording another viewpoint upon the same problem is an analysis of "School Board Regulations Concerning the Elementary-School Principal," by Boggs.[5] He shows that

[1] W. C. Reavis, "The Duties of the Supervising Principal," *Elementary School Journal*, XIX (December, 1918), 279–84.

[2] G. A. Mirick, "Administration and Supervision," *ibid.*, XIX (December, 1918), 285–90.

[3] Roger A. Spencer, "The Work of the School Principal in Supervision," *ibid.*, XX (November, 1919), 176–87.

[4] Franklin Bobbitt, "Mistakes Often Made by Principals," *ibid.*, XX (January and February, 1920), 337–46, 419–34.

[5] J. Boggs, "School Board Regulations Concerning the Elementary-School Principal," *ibid.*, XX (June, 1920), 730–42.

upon the basis of Professor McMurry's classification of functions as: first, those that are purely clerical; second, those that concern instruction more or less but that largely concern routine and therefore require little special ability: third, those that require the technical ability of the educational specialist; the functions enumerated in official regulations may be listed as in Table VII. (Initial numbers indicate McMurry's classification.)

TABLE VII

Class of Functions	Number of Different Requirements	Number of Times Mentioned
1.....	15	101
2.....	62	405
3.....	8	94

If it may be safely assumed that principals follow prescribed regulations as to their duties, Boggs's data appear to indicate that administrative duties receive an emphasis in practice that bears a ratio of two to one to that accorded to other functions, that clerical work receives at least as much emphasis as supervision, community leadership, and professional study combined (McMurry's third function), and that the attention given to any one of the last three named is indeed slight.

POINTS OF DIFFERENCE BETWEEN THEORY AND PRACTICE AS TO THE RELATIVE IMPORTANCE OF THE PRINCIPAL'S FUNCTIONS

Conclusions already reached make it clear that there are marked differences between theory and practice as to the emphasis placed upon certain functions. The main points of variance seem to be:

1. The displacement in practice of supervision by the routine duties of clerical work and administration. Both of these take precedence over the first-named function.

2. The overaccentuation in practice of administration, so that while theoretically only half as important as supervision, it overshadows the higher function.

3. The elevation of clerical work from a position theoretically the lowest to the rank of practically second in importance.

4. Lack of sufficient attention to community leadership and professional study and growth.

The first three points are very closely related to each other, and have to do chiefly with the amount of importance attached to

the clerical, administrative, and supervisory functions with reference to each other and to the remaining functions. Reasons for the more or less striking variations of educational practice from the true course set by educational theory upon the points just mentioned may be said to fall naturally into three general groups.

The first of these is historical in character. With the growth of the school to a point where more than one teacher was employed, it became necessary to provide some sort of a head. This official, himself a teacher, was charged with the additional duties of attending to reports, of looking after janitor service and the like, and usually of handling cases of discipline which had proven too difficult for his subordinates. We thus see him first as teacher, clerk, and general manager. The continued growth of the school in size and educational ideals has gradually emancipated him from the teaching burden in the larger cities, although there are still some cities of considerable size in which many principals are only head teachers.

However, while the development of the school in size and ideals seems to have lightened his teaching burdens, the clerical and managerial duties of the principal have been increased manyfold thereby. Systems of free textbooks, organizations of parents and pupils, etc., are typical instances of the growing clerical and administrative demands of the modern school. There is at present some indication that clerical relief is on the way, but it is still in the offing as far as large numbers of principals are concerned. The principalship is, in fact, still undeveloped. The time will doubtless come when the principal's desk will be hewn clear of its long accumulated wreckage of red tape and its potentialities fully realized; but at present we are only sharpening the ax in preparation for the operation.

The second of these reasons has to do with the position of the principalship in the educational scheme. Below is the corps of teachers. Above is the superintendent's office. The principal is frequently thought of as merely the spokesman of the superior authority, whose chief duty it is to pass on to his teachers the dicta of the higher office. Superintendent Herbert S. Weet, of Rochester, tells of the city superintendent who complained that his "greatest problem was knowing how actually to get things accomplished in the several schools, in view of the fact that each school had a

principal through whom the superintendent was obliged to work."[1] In the New York survey, Professor McMurry found that in numerous districts the teachers felt their responsibility to be to the district superintendent rather than to the principal in professional matters. Such a conception of the office is not to be wondered at when the location of the principalship in our educational scheme is considered.

The third reason, or group of reasons, has to do with the principal himself. Here are numerous reports, questionnaires, etc. Usually there is a stipulated time by which each may be filed. Failure to make prompt returns may call the unfavorable attention of the superintendent to the principal's apparent neglect of duty. Accordingly, his more important but less tangible and pressing functions are suspended until such time as the impending clerical load can be cleared away. Here also are details of management. Many of them call for instant decision and adjustment. Others appear to be almost as imminent. All are therefore attacked as fast as they arise lest one should be overlooked which might cause the principal to appear in the light of a poor executive or a timid one. Meanwhile the principal carries a vision about with him of the time when these petty administrative details will all be crossed off the calendar and he can actually devote some uninterrupted time to supervisory problems. Usually, however, that visionary time remains, like the will-o'-the-wisp, just ahead. This will always be so until a suitable technique of the principalship has been developed. The mere supplying of clerical assistance will not alone relieve the situation, although the adoption of such a step will certainly hasten the day of relief by forcing the classification of duties and the reduction to routine of such as are mainly mechanical.

It is plain, too, that the principal's philosophy of his job will have considerable bearing. He may not be clear in mind as to what his most valuable functions are. He may rest content to keep the machinery well oiled and running, which is truly of considerable importance, and may devote the greater part of his energies thereto, to the detriment of his supervisory services.

[1] Herbert S. Weet, *op. cit.*

The weakness of community leadership and professional study may be largely accounted for by the fact that the broadest conceptions of the principalship are yet in process of evolution, and by the general inadequacy of salaries. Training for educational leadership has been offered by colleges of education only within comparatively recent years and very little of what is now offered bears specifically upon problems of the principalship. Many principals now in service received their training previous to the offering of such courses. Through no fault of their own, but owing to their financial inability to manage a leave of absence for study, large numbers are prevented from supplementing their original training.

The foregoing analysis brings to light some of the needs of the situation, which may be summarized as follows:

1. More study by principals looking toward a development of two things:

a) A philosophy of the principalship;

b) A working administrative and supervisory technique.

2. More discussion of the principalship by educational journals, following the example set by the *Elementary School Journal*.

3. More courses bearing directly upon the problems of the principal in leading colleges of education.

4. A real literature of the principalship, of specific rather than general character, comprising books as well as discussions in periodicals.

5. Recognition by superintendents generally "that the principal of an elementary school should be privileged and required to exercise initiative and leadership." "Central supervision, valuable as it is when rightly done, can never solve the problem."[1]

6. As an essential condition of the preceding point, there should be efficient office help for the principal. Responsibility for the exercise of initiative implies freedom for action, in equal ratio.

7. A salary which will make possible a continuance of professional study.

8. Maintenance by the principal of a professional spirit, regardless of hampering conditions of work.

[1] Herbert S. Weet, *op. cit.*

SUMMARY AND CONCLUSIONS

The functions of the elementary-school principal may be classified under five heads, namely, supervision of teaching, administration, community leadership, professional study and growth, and clerical work.

The order of importance of these functions, or classes of functions, in the light of the best educational theory, is as follows: supervision of teaching, administration, community leadership, professional study and growth, clerical work.

Three of these, at least, involve the possession of expert ability and professional ideals, namely, supervision of teaching, community leadership, and professional study and growth. A fourth, administration, may also be said to involve these to a considerable degree.

Much has been said in this study about leadership. All of the principal's functions except the lowest, clerical work, imply leadership of one type or another. Theoretically, therefore, the principal should be the leader of his school community, and should possess expert ability and professional ideals.

In practice, however, the principalship falls considerably short of its ideal, the order of importance of the functions being about as follows:

Rank	Judgment of University Men	Practice of Seattle Principals
1.....	Administration	Administration
2.....	Clerical work	Supervision
3.....	Supervision	Clerical work
4.....	Community leadership or professional study	.....

The reasons for this failure to realize the highest possibilities are briefly:

1. Lack of understanding by principals and superintendents of what the functions of the principal really are and what their relative importance is. This is in large part due to the rapid development of the modern school which has thrust upon the principal a job for which until within comparatively recent years he has been utterly unable to prepare himself, no matter how much

he might wish to do so, for the reason that no higher institution of learning offered any specific training bearing upon his particular problems. His understanding of his work has been further hampered by a striking lack of a literature of the principalship.

2. The slowness of the evolution of the principalship as a part of the educational organism. This is partly a result of the lack of special training on the part of principals and partly unavoidable. For example, principals were formerly expected to teach full time in addition to their other duties, and even now are usually without relief from clerical duties which absorb time and energy.

3. Lack of professional techniques. Principals are almost entirely without a technique for handling even the simple routine matters, with the result that valuable time is frequently wasted in their dispatch. The technique of supervising instruction, moreover, is yet scarcely more than a mass of glittering generalities. The larger part of practical organization of these phases of the principal's duties is still to be perfected.

4. Inadequate salaries, making the position financially unattractive and rendering improvement in service difficult.

However, conditions now point to the eventual attainment by the principal of his proper position of leadership. The late superintendent Ben Blewett, of St. Louis, in his annual report for 1910 expressed the idea as follows:

> The principal of a school must be the responsible head of the school for the school to be in a healthy condition. Anything that interferes with his responsibility threatens the health of the school. This is easily enough seen when there is but one school to be considered. It is in groping in the complexities of a group or system of schools that narrow minds become confused and imagine that external authority either does seek or should seek to usurp those delicate offices of the principal which give character to the school.
>
> The principal as a leader is an energy that draws into itself power from all sources, converts this power to its special needs, and distributes it throughout every phase of school life. It brings to each teacher in the school the experience of her fellow-teachers transmuted by the larger experience and broader view of the principal into the suggestive advice that is most helpful. It reaches each pupil through his sense of the masterful mind manifesting itself in every ideal, plan, and activity of the school as a stimulating, guiding force.

It is in the direction of this ideal that the principalship now appears to be moving through the natural processes of evolution.

MALNUTRITION, A SCHOOL PROBLEM

D. C. BLISS
Superintendent of Schools, Montclair, New Jersey

Malnutrition among children has increasingly attracted the attention of physicians and teachers alert to the responsibility of promoting the health of pupils. It is self-evident that bodily vigor is essential to school progress and efficiency. The large proportion of physically deficient children even from the best homes is seriously disturbing to those who have investigated the question.

Open-air classes have been organized in many cities for the purpose of remedying this situation, but they reach so few children that the results are comparatively negligible. If any general improvement is to be secured, a plan must be adopted which will build up the physique of all malnourished children in the regular classes. More important still, the active co-operation of the home must be secured. If parents are not actively interested, experience shows that children who are helped by superficial remedial measures, such as open-air classes and school lunches, soon relapse into their former condition.

For some years Montclair had maintained an open-air class and various experiments had been made with open-window classrooms. Some groups had been provided with a light mid-forenoon lunch. The pupils involved had shown improvement so long as such treatment was continued. The intervention of the summer vacation with a consequent interruption of the regular régime of the school resulted in the loss of much of this apparent gain. It became evident that more thoroughgoing measures were necessary.

The work of Dr. W. R. P. Emerson, of Boston, in the establishment of nutrition classes indicated a solution of the problem. The height and weight charts published by the United States Bureau of Education suggested an effective method of procedure. At a conference of the health staff it was decided to make a thorough

health survey of the 5,000 children in the public schools. The height and weight charts of the United States Bureau of Education were taken as the standard.

Accumulated statistics are valueless unless they function at once in the school procedure. Accordingly, the figures were analyzed with great care to determine the most feasible point of attack. Children found to be 7 per cent or more underweight were considered malnourished. The survey revealed the usual disquieting state of affairs. The school percentages of malnourished children ranged from 21 per cent to 33 per cent. The total for the city was 28 per cent. To the surprise of many, the so-called poorest section of the city made the best record. This was probably due to the amount of intensive social work that has been carried on in that district for several years.

The survey revealed one surprising fact which is so opposed to the commonly accepted opinion as to be worth noting. It is usually assumed that a tall child is more likely to be underweight than a short one. Parents and even physicians are satisfied with this explanation for the underweight of the tall child. The facts as they appeared in this study do not substantiate any such assumption. Of a group of four hundred and fifty malnourished children, forty-five were located in the tall group, one hundred and forty-four in the short group, and two hundred and sixty-one in the medium group. Reduced to a percentage basis, 10 per cent of the malnourished group are tall, 32 per cent are short, and 58 per cent are of medium height.

A graph was prepared showing the relative proportion of malnutrition among the Americans, Italians, and negroes. Boys and girls were studied separately and also by grades. One interesting fact disclosed was that the percentage of malnutrition was higher when the children began school (7 per cent) than in the second year (5 per cent). Plainly, the regular routine of school resulted in a physical gain to the child.

With the approach of the age of puberty malnourishment steadily increased, reaching a maximum for the city of 36 per cent in the ninth grade. This was followed by a sharp decrease to 24 per cent in the tenth grade. The reasons for this marked

improvement in the physical condition of high-school students are not clear, but it may be due to the elimination of the physically unfit because of inability to measure up to the scholarship standards of the school. It is equally possible that the high percentage of malnourishment in the ninth grade is caused by the physical disturbance of the adolescent period and, when this is once passed, a marked gain in the weight at once follows. Here is a most interesting field for investigation.

With the facts of the survey available the attention of the health department was directed to the problem of remedial measures. Open-air classes and food at public expense did not seem to offer a permanent solution. Accordingly, a more thoroughgoing program was formulated, intended to reach every malnourished child in the schools. This program involved the following principles:

1. A campaign of education among children.

2. A similar campaign to arouse parents to the importance of this question.

3. A glass of milk served in the mid-forenoon in all schools where the need was apparent. The cost of this milk was to be paid by the home unless conditions made it impossible to meet the expense.

4. Nutrition classes established in schools where conditions were the worst. In these groups food was to be served to children selected on the basis of their need for such treatment, and an opportunity for an hour's nap was provided in a well-ventilated school room. It was relatively a simple matter to secure the interest of the children. One of the government health charts was posted in every classroom. This gave the child's name, age, height, and weight. The proper weight for the indicated height was also shown. A gold star was placed opposite the name of every child for which the proper relation between the two factors appeared. Blue stars showed 7 per cent or less under average weight, and red stars represented those pupils who were more than 7 per cent underweight. The slogan "A gold star for every child in Montclair" was adopted.

Physiology at once became a practical subject. Underweight children were eager to bring up the class record and became

interested in the question of a proper diet and reasonable hours of sleep. Some particularly interesting charts were prepared by the children, illustrating by pictures such ideas as "Healthful Play," "Good and Bad Sleeping Conditions," "The Bath," "Good Posture," "Healthful Foods," "Harmful Foods," and many others of a similar character. As the monthly weight records were posted the children eagerly scanned the list to detect signs of improvement as a result of a self-imposed régime.

The hearty co-operation of parents was recognized as essential to the success of this campaign. Since the first step in securing this co-operation is exact and definite information of the facts, cards were prepared and used for monthly reports to the parents. On one side of the card were spaces for each school month and for entries under each of the following items: height, weight, average weight, below, above, loss, gain, star. The following note is printed at the bottom of the card: "Red star indicates more than 7 per cent under the average weight. Blue star indicates 7 per cent or less under average weight. Gold star indicates average weight or better (not to exceed 25 per cent)."

On the reverse side of the card are spaces for the parent's signature once a month and the following items of information:

> The relation of weight to age and height is an indication of a child's physical condition and progress.
>
> A child has a right to be as healthy as the combined knowledge of the home, the school, and the physician can make him. Team work will win.

Coincident with this effort in the classroom, meetings were held in each school, usually under the auspices of the Parents' and Teachers' Associations where the facts of the health survey and the plans for improving the situation were presented by members of the staff. Parents are always interested in whatever is being done to benefit their children, and there was no lack of interest in these meetings. In some instances parents asked for a copy of the health chart in order that they might supplement in the home the efforts made in the school. Unfavorable criticism was rarely heard, as the facts presented were too conclusive to question.

The next step was to find some practicable method of correcting the existing condition. A study of the available reports suggested the wisdom of furnishing a glass of milk with crackers or bread in the middle of the forenoon to those children who were evidently in need of additional nourishment. In three buildings this task was assumed by the school. In another school a group of public-spirited mothers agreed to accept the responsibility. In general, the cost of the milk was paid by the home, but if the financial burden was too great and the child was plainly in need of the food, the cost was met from department funds. Here again an appeal was made to the home, using the following notice:

FACTS REGARDING MONTCLAIR CHILDREN

Over sixty per cent of our children are under average weight. Nearly thirty per cent are more than seven per cent under average weight, which is called by Dr. W. R. P. Emerson of Boston the malnourished group.

Children who are excessively underweight, while they may not be actually sick, are not what they should be or can be. Most of our sturdy children are of average weight or better.

All the information we have shows that excessive underweight does not tend to correct itself and that this condition should be combated by the vigorous efforts of the home and the school.

One of the best foods for building up children is milk. Experience has demonstrated that most children do not get enough milk. More milk frequently is a deciding factor. The school will try to give every underweight child a glass of milk and a cracker or a piece of bread at 10 o'clock in the morning. The cost of this service will not exceed 5 cents per day.

If you approve of this plan, please sign and return the enclosed slip.

PARENTS' PERMISSION AND APPROVAL

If possible, I desire my child to be served with a glass of milk and a cracker or a piece of bread at 10 o'clock.

Signed ———————————————

Address ———————————————

Date ———————

A most gratifying response was made to this appeal. About four hundred children were fed one hundred quarts of milk daily. Milk was also sold from the school centers to parents. This totaled about six hundred quarts daily.

In carrying out the third phase of the program, nutrition classes, a school was selected where conditions were favorable. The principal was keenly interested and the social conditions in the homes were such as to enable the parents to meet the expense of the extra food. Twenty-seven children were selected whose physical condition was such as to justify the assumption that they would benefit from treatment of this kind. A competent woman was employed by the school department to cook and serve the food. A sunny, well-ventilated room was equipped with cots and blankets where pupils took a forty-minute nap at noon. Food consisted of a milk-and-bread-and-butter breakfast, a substantial dinner, and a milk lunch with bread and butter in the afternoon before the children leave for home. This is substantially the same régime as is followed in the typical open-air class with two important modifications. Children are not kept in a room maintained at a low temperature, and the department is saved the heavy expense of a special teacher. The home is asked to meet the expense of the raw food, while the school bears the expense of the matron's salary, equipment, and general overhead. Parent co-operation is readily secured in providing a home breakfast and supper in conformity with the wishes of the school physician.

The daily cost per child is approximately 30 cents to the home for the food and 15 cents overhead to the school. All the children in this school are weighed at regular intervals, furnishing data for a comparison of the relative advantage of the three methods of treatment, viz., (*a*) nutrition class with food, (*b*) milk in the forenoon, and (*c*) home care only.

The returns are unmistakable, even though the scheme has been in operation only seven weeks. The twenty-seven pupils in the nutrition class have made an average gain of $3\frac{7}{10}$ pounds. The group of one hundred and seventeen children taking milk have made an average gain of $2\frac{4}{10}$ pounds, while one hundred and thirty-four pupils receiving home care have gained only an average of $2\frac{2}{10}$ pounds during the period. Undoubtedly, the homes of the latter group have been greatly influenced by the active campaign of home education, making this gain larger than

is to be expected under usual conditions. That the education campaign is productive of results is evidenced by the reduction of the percentage of the malnourished group from 39 per cent on September 20 to 26 per cent on November 12. It is not to be expected, however, that this rate of improvement will continue, since the 13 per cent reduction in the malnourished group has occurred among those most amenable to treatment.

Evidence is not lacking that this problem of malnourishment is more common than is generally supposed. The Children's Aid Society of New York City reports "undernourished children are to be found in appalling numbers." In ten schools investigated by them the percentage of malnourishment ranged from 28 per cent to 67 per cent.

Such conditions as these can be corrected only by a frank recognition of the facts by school authorities and by the most determined efforts to remedy them. It will not be an easy task to arouse apathetic and ignorant parents to the necessity of active measures for the correction of evil. We are still a long way from Spencer's ideal of a sound mind in a sound body, but we are beginning to understand the folly of trying to educate the mind and ignoring the body.

Good citizenship is impossible without healthy normal bodies. Just to the extent that the schools secure this result they are safeguarding the future of the country.

COMPARATIVE STATE SCHOOL AIDS[1]

CARTER ALEXANDER
State Department of Public Instruction, Madison, Wisconsin

Everywhere far-seeing friends of education realize that about the hardest task connected with public schools in the next few years will be the securing of adequate support for these schools. Securing such support, never child's play, has been extremely difficult in the last few years. It will be even more difficult as the present nation-wide financial stringency tightens.

In this crisis, educational leaders frequently consider the possibility of greater state aid for schools. These leaders expect larger state aid when intelligently administered to raise the quality of school work in backward places, to stimulate progressive districts to greater efforts, and to even up the burdens of school taxation. The average taxpayer, who is typical of the average school community, simply thinks that state aid will bring more money from the outside to the school in which he is interested. He doesn't care where this money is secured. In his thought of securing the money he would rather have it without any restrictions. He seldom stops to think that all state aid must eventually come out of his pocket or the pockets of other taxpayers. Such extravagant claims are made for state aid or such great things are expected of it by some leaders and many taxpayers that we may very profitably in a conference like this consider its possibilities with care and impartiality. Just what, in the light of past experience and of the present situation, should a state do about its distributive school fund?

The ripened experience of the past in the matter of state aid under normal conditions in the United States is embodied in the figures on expenditures for public elementary and high schools of

[1] From a presentation made to the Citizens' Conference on Education, called by Commissioner Claxton at Chicago, November 29, 1920.

the report of the United States Commissioner of Education. From these figures for 1917–18, Burgess[1] computes the following:

TABLE I

PER CENT OF SCHOOL REVENUES DERIVED FROM DIFFERENT SOURCES
(All public elementary and high schools of the United States, 1918)

Local taxes	78.8
State taxes	13.7
Permanent funds and lands	2.9
All other sources	4.6
Total	100.0

In the early days of public-school development, state aid was expected to pay a large part of school expenditures. Thus, in Illinois about 1865 it paid 65 per cent of the school expenditures as against less than 7 per cent today. But this has changed markedly in many states. For the United States as a whole, the proportionate part of state aid for schools is only about three-fourths of what it was thirty years ago. The proportionate part of the one item of "state taxes" in school receipts has decreased, as shown in Table II.[2]

TABLE II

PER CENT OF SCHOOL REVENUE DERIVED FROM ONE ITEM, STATE TAXES
(All public elementary and high schools of the United States)

1890	18.4	1910	14.9
1895	19.6	1915	15.4
1900	17.2	1918	13.7
1905	14.6		

Burgess appears to have studied the figures for each year since 1890, for he sums up the situation thus:

> There has been a tendency in the past thirty years . . . . for the state to contribute a constantly smaller share of the educational funds of the community. There was an important exception to this tendency between the years 1905 and 1915. The movement appears to have been interrupted in 1915. The problem of school support continues to be in the main largely one of local finance.[3]

[1] W. Randolph Burgess, *Trends of School Costs*, p. 119. New York: Russell Sage Foundation, 1920.

[2] Computed from data on page 4 of "Statistics of State School Systems, 1917–18," *Bureau of Education Bulletin No. 11*, 1920.

[3] W. Randolph Burgess, *op. cit.*, p. 119.

It is difficult to compare different states with respect to the amounts of their state school aid. But a rough comparison may be made by taking into account the population figures and the wealth data for the states to be used in the comparison. The 1920 census figures on the population of each state have appeared in the daily papers and will doubtless be available in government circulars and reports from now on. The wealth figures by states were last collected in 1912 and issued in 1914. The speaker is informed that no similar figures will be published for several years. But the 1912 data are probably safe enough for relative purposes and may be obtained from any recent edition of the *Statistical Abstract of the United States*. In the 1919 edition they appear on page 702. These wealth figures are next to be changed into ratios, counting the wealth of the home state as 1. Then, starting with the amount of state aid in the home state, it is easy to multiply by the ratios so as to find what the other states should raise to do as much as the home state, on both the population and the wealth bases. These calculated figures may then be compared with the known amounts of state aid in the states, the latter sums to be secured from all available sources, such as educational periodicals, state reports, calculations on the assessed wealth of the state when the rate for state school purposes is known, etc. Such indirect methods are necessary because conditions and methods of keeping accounts vary so in the different states that it is almost impossible to secure from the state departments up-to-date figures in a form suitable for comparison. The state departments are too busy to assemble their current data in convenient form for such purposes, and their printed reports are now too old to be of great service.

Table III gives such a comparison of state school aid, using Wisconsin as a basis. Column two gives the amount of state aid that each state would have to raise to equal what Wisconsin is doing in this respect, population alone considered. The third column gives what each state would have to raise to equal Wisconsin in this respect, wealth alone considered. The fourth column credits each state with what it is known to be raising for schools, that is, with the least known amount, and so errs on the side of safety. From this fourth column it is at once apparent that all

of the states save Illinois are doing relatively more for state support of elementary and high schools than is Wisconsin, some of them much more. A similar rough comparison may be worked out from any other state as a basis, provided suitable data can be obtained for it.

TABLE III

COMPARATIVE STATE AID FOR SCHOOLS, 1919–20

	To Equal Wisconsin the State Would Need to Raise		The State Actually Raises at Least
	Population Basis	Wealth Basis	
Wisconsin	$ 4,440,000	$ 4,440,000	$ 4,440,000
Illinois	11,100,000	15,096,000	6,000,000
Indiana	4,884,000	4,884,000	7,883,000
Michigan	6,216,000	5,328,000	9,345,000
Ohio	9,768,000	8,880,000	16,284,000
Minnesota	3,996,000	5,328,000	6,376,000
California	5,772,000	7,992,000	13,250,000
New York	17,316,000	24,864,000	32,000,000
Pennsylvania	14,652,000	14,208,000	50,000,000*
Texas	7,992,000	6,660,000	10,000,000

* Proposed sum.

The original state school funds which were expected to support schools without state taxation have in many states been practically dissipated. In the five states represented at this conference, the nominal permanent common-school funds as reported for 1918[1] varied for the principals from less than a million for Illinois to nearly ten million for Indiana, with the other three states around four or five million. Thus the income from these funds for state aid is practically negligible. Whatever additional money is to be raised in these states for state aid will have to be raised, as in most other commonwealths, from current revenues. All of the five states here represented appear to use some form of mill tax. The exact rates are immaterial because the percentage of assessment varies in the different states. In addition, Michigan secures part of the revenue from taxes on public-service corporations and certain other corporations and from an inheritance tax. Massachusetts raised its recent $4,000,000 for increased teachers' salaries from an income tax, and such a tax was advocated at the last Pennsylvania school men's week for that state. As to the particular

[1] *Bureau of Education Bulletin No. 11*, 1920, p. 119.

source from which additional state school aid is to be derived, students of school finance differ. Professors Judd and Morrison of the University of Chicago advocate securing state school revenue from an income tax because they think that property is already taxed all it can possibly stand.[1] Dr. Burgess of the Russell Sage Foundation, who has made a very extensive study of trends in school costs throughout the country for the last fifty years, thinks that property can stand a great deal more taxation for school purposes than it has ever carried so far.[2] The speaker is not particularly concerned as to where the revenue for additional state aid is to be secured, for two reasons. First, the state must raise revenue for all its needs as best it can. Schools comprise only one of these needs, and the amount of money secured for schools will depend mainly upon how forcibly school needs are presented to the legislature as against the needs of other interests. If the legislature can be convinced that the schools need a certain sum and that sufficient voting strength in the state is behind the demand for this sum, this amount will be raised in some way. It is true that certain sources may be utilized with less outcry against the schools than can other sources. For instance, raising money from an income tax, a corporation tax, or an inheritance tax, will probably irritate fewer people in a state than will a general property tax. But, on the other hand, it is certain to irritate people who are individually much more powerful and relentless and infinitely better organized, so that this advantage may after all be a doubtful one. Again, the proceeds of an income tax may vary altogether too much to be a thoroughly satisfactory source of school support. The yields of taxes on 1920 and 1921 incomes bid fair to be much less than those on 1919 incomes. Furthermore, the proceeds of the income tax may simply reduce the taxes raised from real estate so that the total taxes may be no more than in other states.[3] Second, the method of apportioning whatever state aid is available, is far more important than the amount distributed.

[1] H. C. Morrison, "Taxation, Teachers' Salaries, and Cost of Education," *Elementary School Journal*, XX (September, 1919), 48.

[2] W. Randolph Burgess, *op. cit.*, pp. 130–35.

[3] T. E. Lyons, "The Income Tax as a Source of Municipal Revenue," *Minnesota Municipalities*, V, 95–104.

About the poorest way to distribute state school revenue is on a school-census basis. This bears no relation to real school needs and stimulates no local communities to get more pupils into the public schools, to have longer terms, to have better attendance, or to do better school work, or to introduce improvements. Indeed, all who know the history of education in Connecticut and Texas agree that the large state aids in these states in the past actually hindered schools. These aids, which were distributed on a school-census basis, were large enough to enable many districts with little or no local support to have some sort of a school, but not a good one. The communities naturally did not exert themselves, and the schools suffered accordingly. Unless some other method of apportionment is to be used, any state in this conference probably had better not increase its state aid. Far better results will be secured by extending the special state-aid provisions already in use in the five states such as:

A minimum school term for elementary schools as the six-months provision in Indiana or the eight-months in Wisconsin.

The aid to weak districts that are already taxing themselves heavily as in Indiana or Ohio.

The payment of salaries of county superintendents as in Illinois and Ohio and of supervising teachers as in Wisconsin.

The requirement of minimum salaries as in Ohio and Wisconsin.

The transportation aid of Michigan and Wisconsin.

The aid for county training-schools and high schools that train rural teachers of Michigan, Ohio, and Wisconsin.

The aid for different types of schools in Wisconsin.

The aid for schools educating special children, such as the blind and the deaf in Illinois and Wisconsin.

This matter of methods of apportionment is so important that it is well to close by outlining the recommendations of the present Minnesota Educational Commission which will be presented to their coming legislature.[1] They have presented by far the best study of present-day state aid with which the speaker is acquainted, and their report concludes that Minnesota needs not more state

[1] See also Carter Alexander, "A Larger State Distributive School Fund for Illinois," *School and Society*, XII, 565–76.

aid, but a more intelligent distribution of the amounts available. They propose to distribute about one-third of the total state aid on the number of children enrolled in each district for sixty days each in the preceding year. About one-fifth will be used to equalize educational opportunity by special aid for transportation, buildings, ungraded-school supervision, payment of high-school tuition, assisting school libraries, and providing for school attendance of isolated pupils. About one-sixth will be used to establish minimum standards in various kinds of schools. About one-twentieth will be used to equalize the cost of school maintenance in various kinds of schools where the taxpayers are more than ordinarily burdened with school taxes. About one-fifth will be used to stimulate educational progress in the matter of introducing newer subjects, special training for defectives, physical education and health supervision, evening schools, community service, and so on. About one-thirtieth is reserved for high-school departments that train rural teachers. The report of this commission in its entirety is well worth the careful study of every member of this conference.

EXTREME RETARDATION IN ARITHMETIC

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During the past five years spent in examining backward and problem children in the public schools, there have come to the writer's attention thirty-four cases of children who were extremely backward in the arithmetic of the curriculum. The teachers said of these children, "Has no number sense," "Can get no idea of arithmetic," "I can teach her anything but arithmetic." The cases discussed in this paper comprise all such children so reported, found to be normal in general mental ability and who were not having marked difficulty in any other subject of the curriculum of the grades of which they were members. It may be remarked parenthetically that no child has ever been reported as having special difficulty with arithmetic only who proved to be a mentally defective child.

The usual tests of mental ability, consisting largely of tests derived from the Healy-Fernald series and the Terman scale, were given these children. In addition, an examination of the child's ability with the subjects taught in his grade or previous grades was given to verify the teacher's report of his school standing. With the children who showed an ordinary understanding of the history and geography instruction and other subjects of the curriculum, tests of mental ability were reduced to a minimum. In all cases, however, the cross-line tests A and B of the Healy-Fernald series were given and with the children above ten, generally, the Code test. The latter tests are significant in testing the child's ability to retain and analyze visual imagery and concentrate attention upon representative material as opposed to the self-corrective concrete.

Immediate auditory memory was tested by the use of spoken digits and sentences. Persistent memory was tested through the

child's report of school subjects studied over a period of time, such as history, geography, stories read at some time in the past, etc.

The special examination in arithmetic consists of such problems as will test the child's knowledge of numbers and number relationships. The examination consists of six parts. In each part there are two phases of each test employed. The first is the mechanical element which may be learned as a feat of mechanical memory. The second is the element of understanding of the abstract mathematical idea involved.

The steps in this examination are made to coincide with the arithmetic curriculum of the public schools. This curriculum is so arranged that counting up to ten is taught in the first grade. In the second grade, the forty-five number facts are taught, with the signs, plus and minus, the multiplication tables of twos and threes, and the times sign. Simple one-step problems are a part of the work of this grade. In the third grade, the multiplication tables are taught with formal multiplication by one digit, and the processes of addition and subtraction with bridging of tens. In the fourth grade, the formal work consists of multiplication and division with multipliers and divisors of two digits. In the fifth grade, the formal work consists of fractions and fractional processes. In the sixth grade, decimal fractions are taught, together with their processes. In the seventh grade, the formal work consists of percentage and its applications to simple problems. In the eighth grade, the work consists of square root and the applications of the arithmetic learned in lower grades to practical problems of industrial and business life.

The children of this study represent various degrees of retardation. Assuming that six years was the age at which all the children entered school—in most cases it could not be definitely determined—seven were in the grades normal to their ages; nine were retarded one year; thirteen were retarded two years; five were retarded three years.

It was found in each of these cases that the child was not lacking in a concept of number. In each case the child understood the meaning of number. The least advanced of these children could count a row of objects to twenty or more, and hand any desired

number from a group before him; he could also make number combinations in some fashion by the use of counters. The more advanced individuals could perform some of the processes of the number work between the grades of two and eight. The problem then resolved itself into the question, "Why were these children so far behind in the arithmetic work of their grades?" The answer was found in many cases when an investigation was made of the child's health history in connection with his school history. The tabulations indicate the findings in these cases. In eight cases it was found that the special defect in arithmetic was correlated quite definitely with special periods of ill-health. The significant information concerning these cases is contained in Table I. The tables give the following items of information:

Beginning at the left, in the first column is found the initials of the child; in the second, sex; the third, the age in years and months; in the fourth, grade, "R" in parenthesis indicating that the grade is being repeated; in the fifth, those topics of the arithmetic work of the curriculum in which the individual's knowledge is markedly deficient or lacking entirely; in the sixth, those topics with which he has such a degree of knowledge as serves for a basis for the next step in the curriculum; in the seventh, the correlated circumstances indicating periods of ill-health and absence from school coinciding with the periods during which the topics indicated in the fifth or defect column are taught; in the eighth, information concerning the individual gained in later follow-up work.

Referring then to Table I, we find that C. B., a girl of eleven years and ten months, in Grade V, was lacking in knowledge of the processes of multiplication and division and in reasoning with arithmetical material; that she had, however, a knowledge of the multiplication tables, and also a knowledge of fractional ideas which was gained during the period of examination. The correlated circumstances in this case are long absence during the third grade with scarlet fever, and during the fourth grade with whooping cough. We can reasonably infer that the process of multiplication was therefore imperfectly or not at all acquired in the third grade, and likewise the process of long division was not mastered in the fourth grade. The recommendation was made

TABLE I

SPECIAL PERIODS OF ILL-HEALTH

Pupil	Sex	Age	Grade	Arithmetical Defects	Arithmetical Accomplishments	Correlated Circumstances	Follow-up
C. B.	F.	11-10	V	Multiplication; long division; reasoning	Tables; fractional ideas gained in one period of instruction	Scarlet fever in third grade; whooping cough in fourth	Seventh grade. A mediocre student, but passing
J. B.	M.	15	VIII B	Fractional processes; reduction of common fractions to decimals	Long division, slow but accurate; reasoning; fractional ideas	Out much during fifth with sore throat	Graduated with fifth-grade arithmetic
A. O.	F.	12	IV (R)	Long division; reasoning, though gets idea with teaching	Multiplication; subtraction	Pneumonia at six, nine, and ten years; influenza at eleven years. Open-air case	
D. B.	M.	11-7	V (R)	Long division; reasoning	Multiplication; subtraction; fractional processes	Out half of fourth grade; nervous; stomach trouble; poor vision	VI A. Good in long division and reasoning; poor in fractions; health improved; poor vision
W. P.	M.	10-9	IV	Pointing decimals in cost computing; bridging tens	Multiplication; reasoning	Influenza twice in third grade	
C. G.	M.	10-10	IV (R)	Combinations and processes not automatic; slow in work; trial and error method in long division	Reasoning; knowledge of processes; intelligent trial and error in all work	Pneumonia in third and fourth grades; poor nutrition; rachitic	
A. S.	M.	9-7	III (R)	Multiplication tables	Addition and subtraction combinations; mathematical conception of tables	Changed schools often; out much with toothache and earache	
P. P.	M.	9-11	IV B	Bridging tens, multiplication tables not automatic	Addition and subtraction combinations; process of long division	Scarlet fever in third grade	

that she be given special instruction in these topics. A follow-up of her case two years later showed her to be in the seventh grade, considered by her teacher a mediocre student in general, but passing in all subjects.

J. B. was defective in the process of common fractions and he could not reduce common fractions to decimals. He could do long division slowly but accurately. He could point off properly in division of decimals. He was able in reasoning with arithmetical material and possessed correct ideas of fractional quantities. He had been absent much during the fifth grade with sore throat, and therefore missed much of the instruction in common fractions given in that grade. It was recommended that he attend the fifth-grade arithmetic class. A year and one-half later he was reported as having graduated from the eighth grade, but having gotten no further than fifth-grade arithmetic.

For the other individuals of Table I, special periods of ill-health are shown to coincide with the grades in which were taught the particular topics of the child's failures.

Table II indicates a correlation between the type of work which the child hands in to the teacher and the child's general state of health. M. V. was a girl of twelve years and ten months, in the fifth grade. Her teacher said that she was very poor in arithmetic. The weekly papers, which were handed in and from which the arithmetic grades were made up, were always so poor and contained so many mistakes and problems not correctly done, that her grade was much below the passing mark. She did, however, upon examination do all the processes of arithmetic up to and including those of her grade, and was capable of reasoning with arithmetical material. She was suffering from tuberculosis, poor vision, much headache. She was not capable of prolonged application to work, and the arithmetic papers suffered because of this. Hers is a late case and has not been followed up.

A. P. was reported by his teacher as making grades of twenty or thirty usually. An examination of the papers handed in by him for a period of time indicated that he had always correctly performed the first two or three problems of the assignment, but with errors in the performance of the succeeding ones. It was apparent

TABLE II

GENERAL ILL-HEALTH

Pupil	Sex	Age	Grade	Arithmetical Defects	Arithmetical Accomplishments	Correlated Circumstances	Follow-up
M. V.	F.	12–10	V (R)	Poor grades	Normal; reasoning	Tuberculosis; poor vision; much headache	
M. B.	F.	9–3 12–4	II V B	Hands in absurd work	Normal; reasoning	Nervous; worries much; nutrition poor; history of chorea	Late case for arithmetic
F. D.	M.	10–9 12–8	IV V	Inaccurate in long division; fractional processes; tables not automatic	Process of long division; fractional ideas	Nervous trouble from early childhood; changed schools and grades often	Late case for arithmetic
S. M.	F.	14–2	VII (R)	Reasoning; decimals	Long division; common fractions	Much headache; tired much; poor nutrition	Technical High School
C. C.	M.	13–5	VI	Long division; fractional processes	Subtraction, multiplication; fractional ideas	Poor vision; headaches; open-air case	
W. M.	M.	14–6	VI	Poor grades; uncertain in reasoning and processes	Long division; fractions	Weak heart; poor nutrition; fourteen different schools	VII. Health improved. Application to work improved. Satisfactory
A. P.	M.	12–2	V	Poor grades; long division	Multiplication; fractions	Poor nutrition; inadequate food supply; listless; fatigues; first problems of written work correct, others wrong	VI A; VII A. Satisfactory work; health good; better food

upon observation of him at work that he fatigued very quickly, with consequent let down of effort. He could work at a task for no more than two or three minutes before fatigue was shown in restlessness, a desire to leave off effort, or sighing. An account of his food supply indicated that it consisted mostly of coffee and white bread. Conference with the mother resulted in a better dietary and his work was satisfactory in the next two grades.

Table III contains the data of six children who confessed a dislike of arithmetic or showed indolence or lack of interest in working with it. E. J. disliked very much to do the careful and intricate work necessary to produce accurate results. He worked outside of school hours in his father's grocery store, and had a fair ability to do sums in his head. He solved the problem, "If four dozen apples cost $1.50, what will three apples cost?" with the result, "9 and a fraction cents, it would be 10 cents." He could not be induced to put down all the work and finish it up properly. He could do simple problems in fractional processes without the use of paper, and with such problems as he could not do in this way he was only with difficulty induced to do so much of paper work as would yield a correct result. The industrial motive and the habits acquired therefrom were stronger than those of the school in setting his attitude toward the subject. It was only with reference to the former that arithmetic had acquired "meaning" for him. A follow-up of this boy in the eighth grade disclosed this characteristic still persisting. His teacher finds it difficult to induce him to hand in careful work.

Three cases are deserving of special mention since it is quite possible that they indicate a stage of difficulty that may be the lot of many other children in their progress in arithmetic. These three children evinced precisely the same type of trouble. Two were in the third grade and one in the second grade, but this second grade was doing the work normally done by the third grade in other schools. The difficulty which these three present is a lack of discriminative understanding of the meanings of the plus and times signs, and, therefore, a lack of understanding of the mathematical meaning of the multiplication tables. M. W. when first seen was eight years and eleven months of age. She was

TABLE III

LACK OF INTEREST, APPLICATION, ETC.

Pupil	Sex	Age	Grade	Arithmetical Defects	Arithmetical Accomplishments	Correlated Circumstances	Follow-up
C. B.	M.	14–8	VII A	Poor grades	Normal	Does not care to work; "Can do better but have not gotten down to business with arithmetic"	Finishing eighth in technical high school
N. D.	F.	12–5	V (R)	Long division; tables	Addition and subtraction combinations	Parochial school; little arithmetic	
T. K.	M.	14–1	VI A	Decimals; fractional processes	Long division; reasoning	Previously incorrigible	Returned to fifth for arithmetic; progress good
E. J.	M.	7–11 11–8	II VI	Poor grades; inaccurate work	Normal	Indifferent, careless, does not like intricate work	VIII. Characteristic attitude as before
J. F.	M.	13–11	V (R)	Long division; fractions; tables not automatic	Mathematical conception of fractions and tables	Parochial school between ten and thirteen years; much interested in history and general reading	Working, accountant of bills of lading; likes it; left school in seventh grade; fourth grade arithmetic
P. W.	M.	10–7	IV A	Long division; multiplication	Addition and subtraction combinations; tables	Third grade residence ten weeks	
A. K.	M.	9–8	II (R)	Combinations not automatic	Mathematical conception	Shy, unresponsive; copies arithmetic work from neighbor	

G. H.	M.	14–4	VI B	Poor grades	Normal	Impulsive, flighty, does not like to concentrate; much general reading and information	
M. J.	F.	9–7 12–11	III B V(R)	Addition and subtraction combinations not automatic; does no work; inaccurate in long division	Mathematical conception; fractional ideas; reasoning; tables automatic	Lazy, likes to read light literature; afraid to try. "I doubt myself too much"	None since V A
W. S.	M.	12–7	V	Poor grades; inaccurate in all processes; confusion in bridging tens	Tables; fractional ideas	Left-handed with right-hand instruction	
M. C.	F.	8–7	III B	Absurd work in multiplication	Addition and subtraction combinations	Foreign language difficulty	
M. W.	F.	8–11	III(R)	Mathematical conception of multiplication tables; confusion of plus and times signs	Addition and subtraction combinations	Fond of reading, afraid of arithmetic; will not try	
K. I.	M.	9–6	IV B	Combinations and tables not automatic; confusion of plus and times signs	Mathematical conception		
G. F.	M.	8–11 9–7	II B II(R)	Combinations not automatic; confusion of plus and times signs	Mathematical conception	Does not like to concentrate on work; mother reads lessons and helps much	III A. Improved, normal progress

repeating Grade III B. Her teacher said, "She is absolutely lacking in number sense." On investigation, it was found that the child was intensely interested in dramatic types of literature and spent all of her time outside school hours in the public library reading fairy tales. The examiner gave a period of instruction in the mathematical meaning of the multiplication tables and of the times sign which she came to comprehend, though slowly. When she was inquired for later she had left the school and could not be found.

K. I., when seen, was nine years and six months of age, in Grade IV B. He had not made the number combinations of second-grade work automatic in memory and when given such problems, he found the answers by silent counting with nods of the head. He did not know the meaning of the times sign and confused it with the plus sign, and had become so distraught with regard to this that he was emotionally disturbed and unhappy when the subject of numbers was broached. When the "times" idea was explained by the use of marks he expressed much surprise. "It seems easy that way, I never thought of that." He said he had never seen any but the written symbol table and did not know what it meant.

The third case, G. F., presents the same type of difficulty. His teacher said, "He has no number sense." He was very fertile in his experimentation with number combinations given him. When given four plus three and four times three he multiplied, added and subtracted in an effort to find out what would satisfy the examiner's demand. He was taught the difference in the meaning of the signs and what they meant mathematically. He was then instructed to work out for himself the table of 2's. Two days later he had committed this table to memory. A recent report from the school indicates that he is doing satisfactory work.

W. S.[1] was found to be confused with reference to bridging tens. He sometimes did it properly and sometimes carried the units instead of the tens figure in multiplication. In the opinion of his examiner, this confusion was associated with the fact that the child was naturally left-handed, but that he had been taught to write

[1] Reports concerning this child and M. C. are contributed by Dr. Grace Munson, Department of Child Study, Chicago.

with the right hand. In such cases, it is apparent that children are frequently confused as to which hand to use under certain situations, or use them interchangeably in the same situations. This child's confusion was found to extend to certain manual situations also. All through school he had had difficulty in writing. His examiner reported in part:

> At present he shows very poor motor control for a boy of his age. He shows this in his drawing, in his writing of numbers, and his poor ability to draw designs from memory. I believe that the training of the right hand has confused his association in such a way that he lacks orientation in certain kinds of mental imagery. This defect shows up particularly in arithmetic processes in which it is necessary to imagine numbers in certain spatial relations to each other. He always carries the wrong number, though he is conscious of a tendency to do this and works valiantly to overcome it in the test problems given him. This lack of orientation makes his thinking confused and difficult.

One may assume this difficulty to be allied to the phenomenon of mirror-writing associated with left-handedness (1).

Many children who have failed to make the number knowledge of the second and third grades automatic resort to various methods of overcoming this defect in doing their work. D. G., of Table IV, in the third grade, who had made no number combinations automatic, resorted to long and elaborate systems of marks to solve her problems in division. She would first make a number of marks equal to the dividend, then fence off groups from this number equal to the divisor and so arrive at the quotient and the remainder. She had not learned the multiplication tables. Others who have not learned the multiplication tables do long division by a system of cumulative additions of the divisor instead of multiplying the divisor by the tentative quotient.

M. C., who did not know what multiplication meant, had worked out a system for doing the work of her grade which eminently satisfied herself. The work of the grade consisted in multiplying two-place numbers by one digit. She consistently added the multiplier and the number in the tens of the multiplicand and wrote this sum on the right-hand side below the line; then she doubled the number in the units place and placed the sum on the left-hand side of the first sum. She carried out this process

TABLE IV

REASON UNDISCOVERED

Pupil	Sex	Age	Grade	Arithmetical Defects	Arithmetical Accomplishments	Correlated Circumstances	Follow-up
S. R.	M.	14–3	VI	Inaccurate in long division; fractions; tables not automatic	Knowledge of process in long division; fractional ideas	Inmate of orphan asylum	VII B. Improved
D. G.	F.	9–10	III B	Combinations not automatic; carries out processes by use of marks	Arithmetical conception		III A. Satisfactory
S. K.	F.	14–9	VII A	Long division; fractions	Multiplication; knowledge of process of long division; fractional ideas		VIII B. Improved, will make grade
J. H.	M.	8–11	III A	Combinations not automatic	Arithmetical conception		
R. V.	F.	8–4	III B	Combinations not automatic	Arithmetical conception		

consistently in ten problems given to her. How she had come to originate this process and be so satisfied with it was not learned.

Dr. Bronner (2) devotes a chapter to the subject of special disability in arithmetic. She reported seven cases diagnosed as indicating such special disability. Case No. 7 was aged fifteen years and a half in the fourth grade. She reported that he failed in each of the four fundamental processes, could not add three-place numbers correctly, nor could he subtract, multiply, or divide. He had learned the multiplication tables by rote, but became confused in their use. He could not subtract 35 cents from 50 cents, nor 87 cents from $1.00. He could not make change with the money before him. He made change correctly only when handling nickels or multiples thereof. He could not solve the problem, "If one dozen costs 4 cents, what would two-thirds of a dozen cost?" He added change equaling $1.25 by counting by nickels and dimes. She reported that he had very poor auditory memory, but good visual memory. She said:

> Except in the light of his successes and failures on psychological tests, it would be difficult to explain his inability to learn arithmetic by ordinary methods. One could only have concluded without tests that he has a very specialized defect, but there could be no understanding of a basis for it. The explanation is evident when his exceedingly poor auditory memory for numbers is discovered. One may ask whether the boy had any concept of number. Certain it is he had opportunity for acquiring this if only through his experience while working. As for powers of discrimination and abstraction which are involved in the transition from experience with the concrete to facility with abstract number combinations, no defect for these is found on tests. If they are found at fault and are factors in his inability to perform arithmetic work, they are at least specialized and true only in this one field.

In her discussion of this case, Dr. Bronner indicates two debatable points. The first is, What shall we consider a concept of number? Second, Is it logical to attribute poor ability with numbers to poor auditory memory however authoritatively the latter may be established? With reference to the second point, one may say that observation of the teaching of number work in the schools indicates that it is taught through every avenue to the understanding. There is written number work placed on the blackboard by the teacher which the child copies and works out

on the paper before him. In the second grade he is given a textbook. He recites the number work orally and hears others around him reciting it. There are involved, therefore, visual imagery and speech and motor imagery as well as auditory imagery. In addition, there is involved the factor of drill which may reasonably be expected to exercise a corrective influence in its special field upon an innate inability in that field. The first point will be referred to again.

Dr. Bronner's case No. 9 was aged ten years and nine months in the second grade. Dr. Bronner says:

> Our examination of this little girl showed that she had no concept of number. She was utterly unable to master the work of her class because she had not the ability to grasp what was done. Whether she could have made normal progress had the concept of number been developed first through dealing with number relationships in concrete material we have no way of knowing, but we feel sure that without this the girl would become more and more confused by ordinary classroom procedure in this subject.

The child proved to be bright in all other reactions to tests of mental ability. The detailed report of the child's number work is as follows: Adds simple number combinations slowly; for instance, $6+5+9=20$; fails on subtraction and multiplication. Upon a second examination of this child eight months later, Dr. Bronner found that she could add four three-place numerals correctly. She could not subtract. When given a problem involving $7-7$, her answer was 7. Some examples of multiplication were correct and others failures; for instance, $4\times3=12$, $4\times8=32$, $4\times6=22$. She failed to give correct answers to 25 cents minus 8 cents, 25 cents minus 4, but gave the correct answer for 10 cents minus 6 cents. With actual change she could not add 50 cents and 25 cents, nor solve 50 cents minus 42 cents; given a quarter and asked to return the change after 18 cents are spent, she showed much difficulty in mental representation of the problem; counted the 18 cents in change and then tried to find what was needed to make up the 25 cents but, since it could not be done with the change before her, failed to solve the problem. Dr. Bronner does not state in what grade the child was at the time of this second examination. When she was in the second grade the year before

her number work was normal with reference to the second-grade curriculum in the Chicago public schools to which the child at this time presumably belonged. If at the time of the second examination she was in the third grade, much of the type of numbers given her for testing was in process of being taught to her, and she might reasonably not have been expected to be proficient in it all. The nonsensical response to the problem 7 minus 7 is one which is not infrequent. In such problems there is sometimes a type of misunderstanding, the child interpreting the problem to mean that he had 7 cents after having lost 7. This child, before coming to Dr. Bronner's attention, was an inmate of an orphan asylum and up to that time had had only two years of reliable schooling in the public school. The available school data in connection with the child's positive number ability would lead more justifiably to the conclusion of little educational opportunity rather than a special disability for arithmetic.

Case No. 11, after examination, was reported as very capable in all respects but very defective in number work. This child of eleven could not add, subtract, multiply, or divide; had only slight knowledge of multiplication tables, and could not carry out the process of multiplication in even very simple problems. When seen again, four years after the first examination, he was still very backward in arithmetic, according to the school report. With respect to his case, Dr. Bronner says, "We can only conclude that there is a special defect which makes it difficult for him to develop a concept of number."

Dr. Bronner in reporting these cases, did not define "concept of number." Such definition is necessary to this discussion. In order to arrive at a definition of this term, we may go back in the history of the development of the number idea in the mind of the child, to the point of its first beginnings. At what age and by what method does the child develop the idea of number?

There is much evidence to indicate that the normal child before entering school is possessed of some ideas of number. Hall (3) reports that out of 10,000 children entering school in Berlin, 7,265 knew numbers from 2 to 4. In Denmark, of 5,600 children entering school, 90 per cent of the boys and 80 per cent of the

girls knew numbers from 1 to 10. In Boston, of 300 children entering school, 17 per cent did not know numbers including 4; 8 per cent did not know numbers including 3.

Members of a class in genetic psychology reported data as follows: Of 183 five-year-old children two months in kindergarten where counting was not taught, 2 per cent could count less than 5, 12 per cent counted to 5, 14 per cent between 5 and 10, 7 per cent between 10 and 20, 61 per cent farther than 20. Of 45 four-year-old children under the same conditions, 13 per cent could count less than 5, 15 per cent could count up to and including 5, 30 per cent could count to between 5 and 10, 20 per cent between 10 and 20, and 17 per cent farther. Of 13 three-year-old children under the same circumstances, 2 could count less than 5, 3 to 5, 6 to between 5 and 10, 1 to 20, and one could not count at all. Fourteen two-and-a-half-year-old children under the same circumstances could count to some point less than 5. Terman (4) finds that children of four years of age can count to four.

It is evident, then, that most children have gained their first number experience some time before entering school. Recorded observations of the development of individual children indicate where this idea of number begins to develop and how it develops. Such data are reported by Perez, Scupin, Froebel, Major, Hogan, Dearborn, Stern, Pestalozzi, and other authors of child diaries. All such reports indicate the same type of process in gaining the idea of number.

The method of gaining the idea of number is most fully reported by Hogan and Major (6). Major's child, in the thirty-first month, knew 2 and 3 as numbers. Before that, he had been counting as a word series. He had been taught by his father and a playmate. In the thirty-second month he confused 3 and 4, and at the end of the third year was not certain about groups of 3 and 4 and was not interested in it.

The child reported by Hogan (7) in the twenty-first month counted 3, 4, 5, 6, 9 voluntarily. A nurse sometime before had counted cards for him, 1, 2, 3, 4. He at once picked up the cards 3 and 4 and after that had called his cards "fee fours." He had learned the number series so that when it was being counted for

him at 5 he would say "6," and "10" after he had heard 9. In the twenty-fifth month he knew 1, 2, and 3 as numbers; that is, he could select from a group these numbers of objects. In the sixty-first month he knew that 2 plus 2 is 4, counted up to 14 by 2's and had learned a great deal more about number ideas and relationships up to 100. He had worked out the multiplication table of 2's, had learned to count to 1,000, etc. In the beginning he had didactic teaching of the counting series from 1 to 10. The rest of his number knowledge was obtained through instruction which he himself sought. That is, after having discovered number meanings between 1 and 10, he asked for further number instruction as step by step was accomplished.

All the accounts of the beginnings of children's number ideas record that counting is first learned as a mere word series.

Pestalozzi, in his diary, reported that his two-and-one-half-year-old child knew number names but not their meanings. In characteristic fashion, Pestalozzi reproached himself for this:

> Why have I been so foolish as to let him pronounce important words without taking care at the same time to give him a clear idea of their meaning? Would it not have been more natural not to teach him to say three till he had thoroughly understood the meaning of two, and is it not in this way that children should be taught to count. Oh, how far I have erred from nature's paths in trying to improve on her teaching.

Observation of small children in the home, as well as diaries of child development indicate, however, that the method Pestalozzi so much deplored is the universal method. The child is first taught the number series by some older member of the family and he learns this as a mere non-sense series just as he learns eeny, meeny, miny, mo, etc. He is not, however, permitted to remain in this meaningless state of mind with reference to the number series. Members of the family frequently ask him, "How many?" always answering for him, so that he comes to associate the number terms with the term "how many," and to answer in some one of those terms. He learns, too, that he must produce some number of a group of objects before him when this demand is presented. He at first produces a number experimentally. If asked for two he produces a handful or three or what not. The instructor then

says, "No, that is not two; this much is two." This experience repeated over and over leads the child to comprehend "twoness," to use Dearborn's (8) term. At this point he has not a number concept, but a number percept. The same kind of experience must be repeated before he comprehends "threeness," and "fourness." Various reports indicate that this comprehension of the number meanings occurs about the age of four, varying between three and five. At the point where the child comprehends that the number series can be extended at will and applied universally to objects about him, he has gained a concept of number. The child who can count and who can report upon the number of objects he has counted and who can produce certain quantities upon demand from a larger group before him must be said to be possessed of the concept of number. The child who under favorable circumstances has failed to learn so much belongs to the imbecile group of feeble-mindedness.

The cases reported by Dr. Bronner, then, as lacking in concept of number, cannot strictly be so classified. A further investigation of these children with reference to their school experience might have indicated why they were backward in their number work, since the process is one of educational development. The number defects of the children reported by Dr. Bronner and the writer are the results of defects in the educational process rather than a defect in some part of the child's innate mental makeup.

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Educational Writings

REVIEWS AND BOOK NOTES

Silent reading.—The present stage in the measurement of silent reading is one in which the central issue is the refinement and control of the scales to be used. A recent monograph[1] from the Russell Sage Foundation makes two contributions to the study of the problems of silent reading. In the first place, it presents a new reading scale which has been constructed by an exceptionally careful and well-planned technique. The second contribution consists of a critical analysis of the problems of measuring silent reading, presenting in detail the requirements of scientific method as applied to such an undertaking.

The author points out the limitations of existing tests and scales as follows:

> These are, first, that they are not all genuine measures of reading ability; second, that where they consist of a series of tasks, these tasks are not consistent in character; third, that they are hard to administer and difficult to score; and fourth, that they do not always furnish data whereby the achievements of an individual child can be compared with the achievements of other children in his own grade [p. 44].

The new test presented, which is entitled "Picture Supplement Scale 1," has four outstanding characteristics. First, "it makes a definite attempt to measure a single ability, which is the ability to read silently a single type of material, at a constant level of difficulty, in a fixed period of time" (p. 44). Second, a careful analysis has been made of the controlling factors in silent reading. When these essential factors are known, their variation and control provide the means for carrying out a careful experiment in the measurement of any single factor. A third characteristic is the simplicity of the test and the ease of its administration. It requires five minutes of time, can be given to a class simultaneously, is easily and quickly scored, and is provided with four editions for repeated tests at different times in the year. The fourth feature is that the test scores are convertible into equivalent scale values for each of the elementary grades, making possible the direct comparison of the reading ability of children who have had different years of schooling.

The explanatory and critical chapters deal with such topics as the law of the single variable, three types of variables in educational measurement, scales for quality of product, scales for difficulty reached, scales for amount done, the difference between tests and scales, and the importance of measuring

[1] MAY AYRES BURGESS, *The Measurement of Silent Reading*. New York: Russell Sage Foundation, 1921. Pp. 163. $1.00.

homogeneous groups. The book also suggests a method for the functional classification of scales.

The monograph is an excellent piece of work. It should have a wide circulation.

Higher education and the war.—It is not often that the writers of history have prepared for them by contemporaneous observers the materials upon which they may at a later time base their judgments. Yet to do this was the motive of President Thwing in assembling the chapters of his book[1] concerning the part played by our colleges and universities in the Great War. In his own words his purpose is stated as follows:

> The lack of adequate interpretation of the part which the American colleges, both Northern and Southern, played in the Civil War, has long seemed to me to be a public and an academic misfortune. . . . . The share which the American college and university had in the World's War was at least as significant and impressive as that which the Civil War represents. Early, therefore, in the great struggle, I began to collect materials for its academic history.

The book serves its purpose well. It presents in an interesting manner the various movements connected with war activities as they developed in the higher educational institutions of the country, beginning with the early days of the conflict during which time not a few college and university men cast lot with the Allies, fighting out of a desire that justice and right might prevail. It traces the part played by many student and faculty organizations in their efforts to further the preparedness of their country, or to contribute to the relief of suffering among the soldiers and civilians of the countries at war. It sets forth the acute financial situation which developed in college and university after we entered the war and halls were made empty because undergraduates, graduates, and faculty alike went forth to battle. The origin, organization, and function of the S.A.T.C. are explained.

"The Spirit of the Student Soldier" is the topic of an impressive chapter. It is followed by an equally significant discussion of his religion.

The co-operative effort of the scientists, especially physicists and chemists, to develop means of combating the submarine in particular, is the subject of extended comment. One wishes that there might have been recorded also the significant things they did.

The poetry inspired by the war is briefly sketched, reference being made to that produced in this country and in England.

A noteworthy chapter deals with the international relations of the academic bodies of England, France, and the United States, as they have been affected by mutual intercourse in co-operative effort. The German academicians receive a goodly share of attention.

Most impressive is the chapter entitled "The Fallen," wherein is listed the contributions in men made by each of the leading colleges and universities.

[1] CHARLES FRANKLIN THWING, *The American Colleges and Universities in the Great War, 1914–1919.* New York: Macmillan Co., 1920. Pp. 275.

To each likewise is ascribed the number failing to return to their Alma Mater —the fallen, the immortals.

The book is not a history of the war. It brings together in outline form some of the things the higher educational institutions did in it. After reading the pages one's admiration for them grows, and one is compelled to agree with their author that "it helps to prove that the higher education, in the person of its teachers and students of successive generations, trains men for the service of the nation."

National Society yearbooks.—For the past twenty years the annual contributions of the National Society for the Study of Education have stimulated wide interest in some of the most pertinent problems of education. The current issue of the yearbook,[1] which comes from the press in two volumes, includes a large volume of new lesson material, and a volume made up of a number of experimental studies of a type essential in the development of a science of education.

Part I of the yearbook consists of the second report of the committee on new materials for education. A mass of new lesson material is included which is organized into five general divisions covering the kindergarten, the primary grades, Grades IV, V, and VI, the junior high school, and special classes. A final chapter is made up of an extensive and well-classified bibliography covering the whole field of subject-matter.

The value of such material depends much upon how extensively it is used. The committee, in making available in a single book such a wide array of new lesson material, has done an excellent service. The next step must be taken by superintendents, principals, and supervisors in seeing that the classroom teachers become acquainted with such a source of lesson helps.

In noting the difficulty which the committee experienced in classifying the large mass of material presented, the reader is impressed with the incompatibility of many of the lessons with a formal organization of education in terms of subjects. Many of the exercises might answer equally well in classes in reading, language, history, or geography. The committee avoids the difficulty by classifying by grades rather than by subjects. The faults of a too formal organization of "subjects" have too long been recognized to need review here. However, the opposite fault of too great a lack of organization and the loss of a definite objective is one which the "project" course of study cannot afford to overlook.

Part II consists of a report of the society's committee on silent reading. The nature of the studies included can be inferred from their titles, which follow:

I. "Factors Affecting Results in Primary Reading," W. W. Theisen

[1] *The Twentieth Yearbook of the National Society for the Study of Education.* Part I, "New Materials of Instruction—Second Report by the Society's Committee." Pp. xv+235. $1.20. Part II, "Report of the Society's Committee on Silent Reading." Pp.ix+172. $1.00. Bloomington, Illinois: Public School Publishing Co., 1921.

II. "Controlling Factors in the Measurement of Silent Reading," May Ayres Burgess
III. "Individual Difficulties in Silent Reading in the Fourth, Fifth, and Sixth Grades," William S. Gray
IV. "The Development of Speed in Silent Reading," John O'Brien
V. "Motivated Drill Work in Third-Grade Silent Reading," J. H. Hoover
VI. "The Effect of a Single Reading," G. A. Yoakum
VII. "Outlining and Summarizing Compared with Re-reading as Methods of Studying," C. E. Germane
VIII. "Measuring Comprehension of Content Material," Harry A. Greene
IX. "The Vocabularies of Ten First Readers," J. L. Packer
X. "The Contents of Readers," Daniel Starch

Following these ten studies are two chapters containing samples of exercise material for use in teaching reading.

The report serves to emphasize the complexity of the problems which arise when any single school subject is studied intensively. It is hoped that this example will stimulate the continuance of similar experiments, not only with reading but with all of the subjects of the curriculum. The report deserves wide reading.

Vocational information for vocational advisors.—The vocational advisors of young people must depend upon statistical and analytical studies of the more common occupations if they desire to give their protégés the most valuable counsel. Although vocational guidance may never become an exact science, it must time its progress to the elaboration of occupational data. Thus far comparatively little has been done toward organizing a body of knowledge designed to give educators and employers a working basis for directing the training of young persons for vocational efficiency.

A worth-while contribution to such a body of knowledge has just appeared in the form of a study[1] made by Lucile Eaves, director of the Research Department of the Women's Educational and Industrial Union of Boston. The author has made a detailed study of the vocational history of over six thousand juvenile workers in several of the largest retail stores in Boston. Her extensive and intensive treatment of the subject makes this book a valuable aid to anyone concerned with the direction of juveniles toward the mercantile pursuits.

Chapter iii, which deals with the personal and educational qualifications of store workers, will interest progressive educators. We are told that the activities of the modern metropolitan store "make possible the utilization of persons whose talents vary from those of the $10,000 general manager to the good-natured moron who was found collecting bundles in a wheeled basket which he pushed up and down the store aisles" (p. 32). It should be added, however, that the mass of juvenile store workers in Boston have finished the

[1] LUCILE EAVES, *Training for Store Service.* Boston: Richard G. Badger, 1920. Pp. 143.

eighth grade, and the more progressive stores are adopting policies that favor the secondary-school graduate. Educational qualifications are not the sole considerations. Pleasing personal traits are listed as requisites of the first order for successful salespeople. Store managers strive to merge their workers into a "smooth-running, harmonious whole."

In outlining a training program for retail-store workers Miss Eaves refers to three possible opportunities. She believes that a new and varied emphasis might be placed upon certain elementary-school subjects such as geography, history, arithmetic, and penmanship. The fact that from one-fourth to one-third of the young people of Boston serve in stores at one time or another justifies, in her mind, a refocusing upon these subjects. She also maintains that continuation and secondary schools should provide definite training for store service. Her third opportunity comes within the store, because certain forms of training "can be most effectively given at the places of employment."

This study discusses in an illuminating manner such topics as store organization, sex and age distribution, cultural value of training for store service, shifting of young store workers, and many others so vital that school administrators, teachers of commercial branches, and store managers as well, can ill afford to pass it by.

Evening play centers.—The problem of providing adequate play facilities for children in our urban centers remains to be solved. One has only to go to a congested district in any large city to find that the street is the play center. In daytime the street is at best a poor playground, but at night the dark streets of a city afford little wholesome attraction to the normal child.

Twenty-two years ago a movement was set on foot in England to provide play centers for children which would give the children a place to go in the evening. The origin and growth of this movement are described in an interesting fashion by the author of a little book recently received.[1] Mrs. Trevelyan, whose heart and soul are in the work she describes, tells in this book of the clubs, the playgrounds, vacation schools, and other activities which have grown up in the last quarter of a century, and which give the children of England the means of play and space to play in, under a light and wise discipline.

The major portion of the book is taken up with the history of the movement. The first play-center experiment was launched in London in 1897 and by stages the original effort has grown into a movement which bids fair to cover all the large centers of population in England. The way in which Mrs. Trevelyan sketches the development of the work is made doubly important by the fact that she has been connected with the movement from the very first and in her writing makes many references to her diary as well as her own personal memory. New methods of conducting play centers are emphasized, and many useful suggestions are to be found in the book. The appendix

[1] JANET PENROSE TREVELYAN, *Evening Play Centres for Children*. New York: E. P. Dutton & Co., 1920. Pp. xxii+183.

contains suggestions on organizing play centers for the present-day needs, lists of hall and playground games, and other valuable information.

The value of play centers to the community as well as to the children need not be demonstrated. However, by calling attention to fresh methods the book makes a real contribution to the progress of a movement which is "fraught with the utmost possibilities for the benefit of the rising generation."

Principles of teaching.—There are two types of books which present discussions of the principles of teaching. One type states these principles in the briefest possible way and then fills up the major portion of the book with descriptions of special devices for presenting material, concrete lesson plans and outlines, and various other kinds of direct helps for the teacher. The other type of book attempts to determine the essential principles, state these clearly, and so emphasize them in the discussion that they shall become guiding factors for the teacher who makes an effort really to think them through. A book[1] of this latter type has recently been written by Professor Turner.

The author attempts to present in compact form the essential principles which a teacher would need to master in order to provide a background for answering the numerous detailed questions of method which continually arise. The general scope of the book is well stated in the following paragraph taken from the editor's introduction:

> The author has for years been the director of a training school. His program of education and outline of principles are the result of thousands of recitations that he has observed. At the very outset he differentiates teaching from other forms of activity. He defines aims of public school teaching in terms of social needs; describes the origin, growth, and organization of subject-matter and shows its functional implications; explains clearly how the child is the chief determinant of method; applies the principles thus arrived at to ways of learning, acquisition of habits, the development of appreciation, means of imposing responsibility; outlines the character of stimuli involved in good teaching, and finally shows how these essentials of good teaching should actually be employed in the presentation of the various elementary-school subjects.

The book provides a brief but clear statement of the generally accepted principles of teaching. It will probably serve a more useful purpose as a handbook for teachers in service than as a textbook for a class in methods.

Nursery schools.—There is a growing belief that in many localities children between the ages of two and six years should be taken from their homes and, for at least a few hours each day, brought under institutional care. The purpose of such an institution is to see to it that the child starts life with as sound a body as it is possible for him to have. It is concerned but incidentally with the acquisition of formal knowledge, devoting itself chiefly to the discovery and correction of remediable physical defects and the

[1] EDWIN ARTHUR TURNER, *The Essentials of Good Teaching.* Boston: D. C. Heath & Co., 1920. Pp. xiii+271.

formation of health-giving habits. A book edited by Grace Owen[1] sets forth with commendable clearness the nature, functions, and methods of such nursery schools.

The book is of multiple authorship. All of the contributors, however, are connected with institutions intimately related to the problems discussed. Save one, all are connected with the Mather Training College, of Manchester, of which Miss Owen is principal.

Of the six parts to the book, Miss Owen claims three. In Part I she discusses the aims and functions of the nursery school, maintaining, as above indicated, that it is concerned primarily with the acquisition and preservation of health. The child should start life unhandicapped. In Part V she points out the kind of training workers in these schools should have. It is necessarily of a specialized kind, and the success of the school is quite dependent upon the possession of properly qualified teachers. In Part VI she describes plans for nursery school buildings as well as enumerating the equipment they should have. Maintaining again that the school is to concern itself with matters of health, and that the learning of set lessons is altogether out of place, the author suggests that buildings be planned in such a way as to yield the maximum in hygienic conditions, and at the same time lend themselves best to the kind of activities carried on within them.

Part II, by Alice Wheeler, approaches the problem of the school from the psychological side, dealing with three large elements, "The Mind of the Child," "Acquired Bases of Character," and "The Development of Self-Consciousness." Throughout her treatment of these topics she points out right methods of procedure, and warns against possible dangers. She constantly urges the principle that the teacher must learn "to work with Nature." These chapters are valuable reading.

Part III, written by Margaret Eggar, in collaboration with Miss Owen, presents in detail the kind of things which may rightfully be introduced into the school by way of educative processes. Two aspects are considered, the environment of the child and his responses thereto. General principles are laid down, together with discussions of particularized activities found useful and commendable. These chapters abound with practical suggestions.

Part IV, by Catherine Chisholm, M.D., elaborates the problems concerned with the hygiene of nursery children. To the American teacher now becoming acquainted with school health-teaching not a little of this material will be familiar. The chapters serve, however, to round out the treatment of the main problem. They are replete with suggestions, non-technical and appropriate in content.

To teachers or supervisors concerned with the institutional care of children of the nursery-school age, this volume will be useful. It is well written, well illustrated, and only significant materials are incorporated into it.

[1] GRACE OWEN, *Nursery School Education*. New York: E. P. Dutton & Co., 1920. Pp. 176.

A study to determine the location of a communal building.—Workers in the field of education are becoming more and more impressed with the utter lack of the use of intelligent methods for determining the proper location of school buildings. This state of affairs applies not only to education but to other fields of community activity as well. One can find in every large city buildings intended for community centers which are limited in their service and in many cases idle by reason of their original inept location. The constant shifting of centers of population consequent upon the rapid growth and expansion of American communities has brought to the attention of progressive minds the value of providing for the future needs of the population through city planning. An expression of this policy is to be found in a recent monograph[1] representing an attempt to apply scientific method to the determination of the location of a Jewish communal building in the city of Boston.

The purpose of the study represented in this monograph is to determine the location of a Jewish communal building so that maximum use of the building would be assured for at least twenty-five to thirty years. Since this span of years is the approximate life of the modern school building the method described in the study should be of interest to administrative officers in the field of education. The study is a part of a doctorate dissertation being prepared under the direction of Dr. Paul Hanus, professor of educational administration in Harvard University.

The study attempts to answer four questions, namely, "(1) What is the trend of general population? (2) What is the trend of Jewish population? (3) In what section of the city is the growth in population most marked? (4) What is the probable growth of the Jewish population in that section during the next ten years?" (p. 10).

The method of attacking these problems was twofold. First, "personal interviews were held with private individuals, corporations, boards, and commissions in possession of experience or tested information pertaining to the problem in hand." Second, "intensive statistical studies were made of the entire city and of that section of the city toward which the trend of Jewish population was marked" (p. 10). Under the first head fourteen groups in all were consulted, while the second portion of the study involved the analysis of seven groups of statistics such as the census figures for 1910, 1915, and 1920; the school population in Roger Wolcott School District; the growth of housing facilities in Ward 21; the traffic growth on the Boston Elevated; and the analysis of "police lists" for population growth in the "circular area." It is interesting to note that these studies tended to corroborate and check one another, thus assuring greater validity to the conclusions drawn from the investigation. One can well agree with the author when he says, "If the monograph serves only to stimulate interest in a carefully planned communal life, it will more than have served its mission and will more than repay the efforts spent upon its production" (p. 5).

[1] BEN ROSEN, *The Trend of Jewish Population in Boston.* Boston: The Federated Jewish Charities, 1921. Pp. 28. $0.75.

Teaching arithmetic.—Progress in educational methods makes necessary, from time to time, the gathering together of new materials relating to the teaching of the different school subjects. Such general treatises serve to make the results of experimental studies available for general use and to standardize to some extent the teaching process. Such a book[1] covering the field of arithmetic has been written by Professor Overman of the Bowling Green, Ohio, Normal School.

The major purposes of the book are, first, to give a clear conception of the ends to be accomplished in arithmetic; second, to analyze the teaching of arithmetic into the various types of teaching which occur and to furnish the guiding principles and specific methods used in each type; and third, to demonstrate the application of these principles and methods by means of illustrative material and lesson plans. The greater portion of the book is given over to the second purpose.

Much of the material in the book will be familiar to those who have followed the literature of method for this subject. There are, however, a number of chapters in which the more recent developments of methods are presented, and in which a very wholesome analysis is made of the processes of teaching arithmetic. Chapters dealing with the development of new ideas, of facts and principles, and of rules and processes will be especially helpful for inexperienced teachers. The last section of the book, which discusses the methods of teaching the application of fundamental number facts to concrete situations, makes a direct attack upon one of the most difficult problems of teaching.

The book is modern in point of view and represents very well the present development of the teaching of arithmetic.

School discipline.—Of the many factors that go to make up a good teacher few are more intangible than the teacher's ability to keep good order and hold the respect of the pupils both in and out of the classroom. The methods which teachers have used in securing and holding good discipline are varied and have always been food for much thought and discussion.

A recent booklet[2] from England summarizes in a comprehensive manner some practical conclusions arrived at by the author after a great many years of service as a schoolmaster. The booklet is written primarily for the use of young masters beginning their careers in secondary schools and approaches the subject of discipline from the standpoint of telling the new teacher what to avoid rather than what to do. The writer places a large amount of emphasis on getting started right at first but does not neglect the fact that constant

[1] JAMES ROBERT OVERMAN, *Principles and Methods of Teaching Arithmetic*, Chicago: Lyons & Carnahan, 1920. Pp. v+340.

[2] ERNEST F. ROW, *Hints on School Discipline.* London: Oxford University Press, 1920. Pp. 59.

vigilance is all-important. It is pointed out with great clearness that the matter of discipline is an individual problem which each teacher must solve for himself. Since life outside the classroom is one of the most important parts of the English secondary school, classroom discipline does not monopolize the discussion.

While intended for the English schoolmaster, the booklet has much valuable and practical advice for teachers everywhere. Certainly the newcomer in the field of teaching may well afford to digest the book's contents from a standpoint of both theory and practice.

For boys who are tired of school.—The high wages paid during the last few years have caused many boys to drop out of school before finishing their course, in order to take advantage of immediate business opportunities. School men have found it hard to present arguments which have strong enough appeal to overcome the desire of the boys to take an immediate part in the world's work. President Smith of Washington and Lee University has prepared a series of articles, which are now available in book form,[1] in which he makes a forceful plea for the school in terms which the average boy will appreciate.

The book contains twelve chapters of which representative titles are "Quitting School for Business," "Success in Study," "On Getting Rich," "The Cash Value of Book Learning," "First Lessons of the World War," and "College and University Training." The author's purpose is to get the boy to look farther ahead than the immediate future and to estimate the value of school preparation in terms of a lifetime rather than in terms of the present.

The book would make excellent material for use with a boy's discussion club, or for reading in a class in vocational or educational guidance. Its free circulation would doubtless increase the period of education for many pupils. Teachers and parents should be acquainted with the book.

Supplementary readers for the upper grades.—Two supplementary readers have recently appeared which are deserving of a place in the list of books for the upper grades. The first[2] of these gives an exceptionally good treatment of Indian life and lore, based upon the story of Hiawatha. In preparing the book the author has taken great care to follow the well-established facts and to make the details true to Indian life. The vividness with which she has succeeded in doing this makes a strong appeal, and the noble character of the hero is worthy of the reader's admiration. The many illustrations, taken from the work of the artist, David C. Lithgow, are very superior and add much to the impression produced by the book.

[1] HENRY LOUIS SMITH, *Your Biggest Job, School or Business.* New York: D. Appleton & Co., 1920. Pp. xi+79.

[2] MARY E. LAING, *The Hero of the Longhouse.* Yonkers-on-Hudson, New York: World Book Co., 1920. Pp. xxvi+329. $1.60.

The second book[1] was prepared at the request of Edward N. Hurley of the United States Shipping Board for the purpose of awakening "a more general interest in American enterprise upon the seas and to instil in the hearts of American boys and girls a just pride in the commercial achievements of our country" (p. 3). The content of the book, while written in story form, covers the field of shipping in a broad way, and stimulates a breadth of interest in this subject which is generally lacking in school children. The many illustrations would do credit to any textbook in geography, and as a supplementary geographical reader the book should serve a useful purpose.

New Primer.—Owing to the wide use of the Beacon series of readers the addition of a new primer[2] will be of interest to many elementary-school teachers and supervisors. The large amount of research which has been carried on in the field of reading in recent years has resulted in the formulation of a number of principles relating to the content of readers and the method of presentation of material. Mr. Fassett gives evidence of being familiar with these principles, and has constructed a primer which is free from many of the faults of earlier attempts.

The instruction in phonics, which is essential in teaching beginning reading, is not confused with the regular material, but is printed in a separate section in the back of the book. These lessons are to be used in combination with the simple reading exercises in the first of the book in such a way that new sight words are introduced very gradually and sufficient drill is provided that these words are thoroughly learned. This combination of phonic and reading exercises carried on side by side results in a method of treatment which is decidedly superior to the common stilted and confused presentation of phonics.

The material of the book is well selected with a view to the interests of children. In the earlier part of the book the dialogue is frequently used, while the latter part is characterized by the simple folk tales which are familiar to all children. The illustrations are exceptionally good, both in regard to the pictures themselves and in their relation to reading matter. In every case they take a full horizontal section of the page and do not break into the lines of print.

The primer is a carefully executed piece of work and deserves the wide use that it will doubtless receive.

Historical geography.—The correlation of geography with history is so important that superior methods of accomplishing this end will be welcomed. An attempt to provide such a method appears in a recent book[3] by Professor

[1] JAMES BALDWIN and W. W. LIVENGOOD, *Sailing the Seas*. New York: American Book Co., 1920. Pp. 304. $1.00.

[2] JAMES H. FASSETT, *The New Beacon Primer*. Boston: Ginn & Co., 1921. Pp. viii+152. $0.72.

[3] DIXON RYAN FOX, *Harper's Atlas of American History*. New York: Harper & Brothers, 1920. Pp. vi+181.

Fox in which he combines a connected historical sketch with an extensive series of maps in such a way that the development of the history of a nation is made clear.

The book contains a series of one hundred and twenty-eight maps illustrating the development of American history. Following the series of maps there are twenty-seven map studies made up of detailed directions for work upon outline maps, together with a brief historical treatment of the topic covered. For each of the map studies references are given to history texts which serve further to illustrate the subject of the study.

The value of the book lies in the convenient form in which the material is presented. The use of such a book would do much to clarify the ideas of children regarding the space relationships of historical events.

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

BURGESS, MAY AYRES. *The Measurement of Silent Reading.* New York: Russell Sage Foundation, 1921. Pp. 163. $1.00.

DAVIS, E. E. *The Twentieth-Century Rural School.* Indianapolis: Bobbs-Merrill Co., 1920. Pp. 242.

MCGREGOR, A. LAURA. *Supervised Study in English.* New York: Macmillan Co., 1921. Pp. xii+220.

MICKEL, ADELAIDE. *Stenciling.* Peoria, Illinois: Manual Arts Press, 1920. Pp. 62. $0.85.

TURNER, EDWIN ARTHUR. *The Essentials of Good Teaching.* Boston: D. C. Heath & Co., 1920. Pp. xiii+271.

BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

AMES, EDGAR W., and ELDRED, ARVIE. *Community Civics.* New York: Macmillan Co., 1921. Pp. xiv+387.

LENNES, N. J., and PHILLIPS, PAUL C. *The Story of Columbus.* Philadelphia: J. B. Lippincott Co., 1921. Pp. viii+168.

MATTHEWS, MARY LOCKWOOD. *Elementary Home Economics.* Boston: Little, Brown & Co., 1921. Pp. xx+343. $1.40.

PUBLICATIONS OF THE UNITED STATES BUREAU OF EDUCATION AND SIMILAR MATERIAL IN PAMPHLET FORM

Recent issues of the Bureau of Education:

Bulletin No. 16, 1920—*A Survey of Education in Hawaii.*

Bulletin No. 36, 1920—*Preliminary Survey of the Schools of the District of Columbia.*

MISCELLANEOUS PUBLICATIONS

ALLEN, F. STURGESS. *Synonyms and Antonyms.* New York: Harper & Brothers, 1921. Pp. xvi+482.

AMES, FISHER, JR. *American Red Cross Work among the French People.* New York: Macmillan Co., 1921. Pp. xvi+178. $2.00.

Annual Report of the General Education Board. New York: General Education Board, 1921. Pp. x+141.

BAKER, EDNA Dean. *The Beginner's Book in Religion.* New York: Abingdon Press, 1921. Pp. 271. $1.75.

EAVES, LUCILE. *Training for Store Service.* Boston: Richard G. Badger, 1920. Pp. 143. $2.00.

LASELLE, MARY A. *The Joy in Work.* New York: Henry Holt & Co., 1920. Pp. xvi+180.

MUNKRES, ALBERTA. *Primary Method in the Church School.* New York: Abingdon Press, 1921. Pp. 242. $1.50.

RATHBONE, JOSEPHINE ADAMS. *Viewpoints in Travel.* Chicago: American Library Association Publishing Board, 1919. Pp. 82.